2025 NYJC JC2 H2 ECONOMICS PRELMINARY EXAMS PAPER 2

The Restaurant Association of Singapore (RAS) reports that many food and beverage (F&B) outlets are understaffed by 20% to 30% even after offering salary increases of 25% to 30%. This persistent problem is attributed to a combination of factors, including Singaporeans' reluctance to take on F&B jobs due to long hours and physical demands, and tightened border controls limiting the number of foreign workers.

Source: RAS, 2025

(a) Explain why a shortage of F&B workers might still exist even with the rise in the salaries of F&B workers. [10]

(b) Discuss possible measures Singapore government can adopt to overcome future shortages of F&B workers. [15]

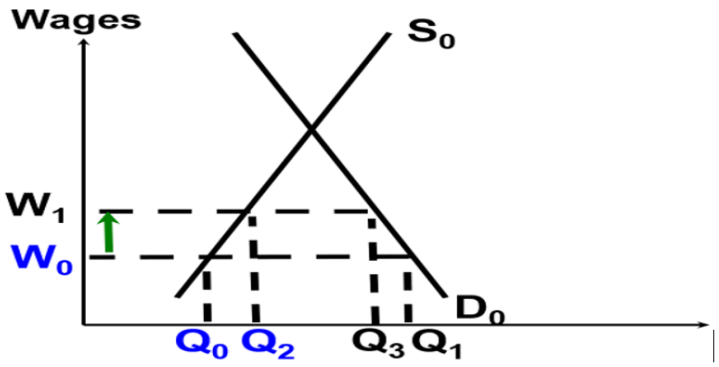
Suggested answer:

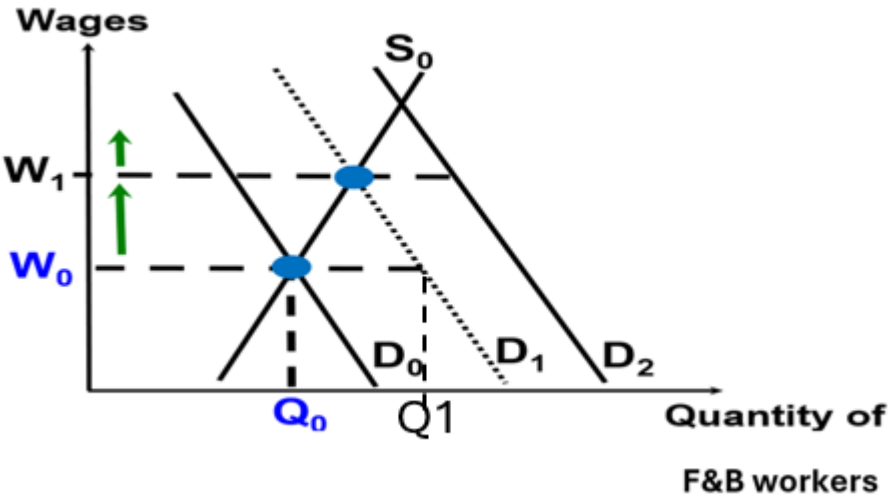
(a) Explain why a shortage of F&B workers might still exist even with the rise in the salaries of F&B workers. [10]

Question Analysis	
Command	Explain why (process explanation)
Content	● Demand, Supply, shortage ● PED, PES
Context	- F&B workers
Synopsis: R1: Shortages might still exist due to inelastic demand and supply of F&B workers R2: Shortages might still exist due to increase in demand and/or fall in supply of F&B workers	

Introduction: Define **shortages**: Shortages arise when the quantity demanded for **F&B workers** exceed the quantity supplied of **F&B workers**. Approach to question: [can differ depending on the approach adopted by the students] The shortages might still exist due to inelastic demand and supply of F&B workers, and the increase in demand and/or fall in supply of F&B workers.	Define key terms Approach to answer
R1: Shortages might still exist due to inelastic demand and supply of F&B workers ● **Define P(W)ED:** Measures the responsiveness of quantity demanded for F&B workers with respect to a change in salary (wage) of **F&B workers**, ceteris paribus. ● **Inelastic P(W)ED:** PED for **F&B workers** is inelastic as the role of **F&B workers** is essential. They are the backbone of a thriving hospitality sector, playing a crucial role in both the operational and customer-facing aspects of food and beverage businesses. They ensure smooth service, maintain hygiene standards, and create positive customer experiences, which are vital for the industry's success and reputation. ● Due to the role of **F&B workers** being a necessity in hospitality services, the increase in wage of **F&B workers** will lead to a less than proportionate fall in	**[ACCURACY]** Accurate definition of PED/PES.

quantity demanded for **F&B workers**, making demand for **F&B workers** price inelastic.	

• **Define P(W)ES:** Measures the responsiveness of quantity supplied of **F&B workers** with respect to a change in wage of **F&B workers**, ceteris paribus. • **Inelastic P(W)ES:** • The supply of F&B workers is often considered price inelastic because it's difficult for businesses to quickly increase the number of workers in response to wage increases. • Supply F&B workers is price inelastic as it takes time for individuals to decide to enter the F&B industry, complete necessary training, and gain experience. They need to be trained and certified by the relevant authorities before they can be employed. More specialized roles, like sommeliers or chefs, require much more extensive training, potentially spanning many years. • At the same time, due to the **long hours and physical demands,** the F&B sector has difficulty attracting workers. • Hence, an increase in the wage of F&B workers will lead to a less than proportionate increase in quantity supplied of F&B workers, making supply price inelastic. • Given the inelastic demand and supply of F&B workers, the current market wage of F&B workers is not high enough to meet the shortages.  • With reference to the figure above, the current market wage of F&B workers is at W_0. However, at this wage, the quantity demanded for F&B workers is at Q_1 while the quantity supplied of F&B workers is at Q_0 resulting in a shortage of Q_0Q_1. Even with the increase in wage rate to W1, the quantity demand of F&B workers will only fall less than proportionately. At the same time, the higher wage rate only increases the quantity supplied of F&B workers less than proportionately as well. Hence, the shortage of F&B workers continues to persist (Q2 Q3) unless a much higher wage rate is achieved in order to eliminate this shortage.	**[DEPTH]** Answer should be contextualised to the F&B workers. **[CLARITY/DEPTH]** Clear explanation of diagram and why shortage still exist despite increase in wages.

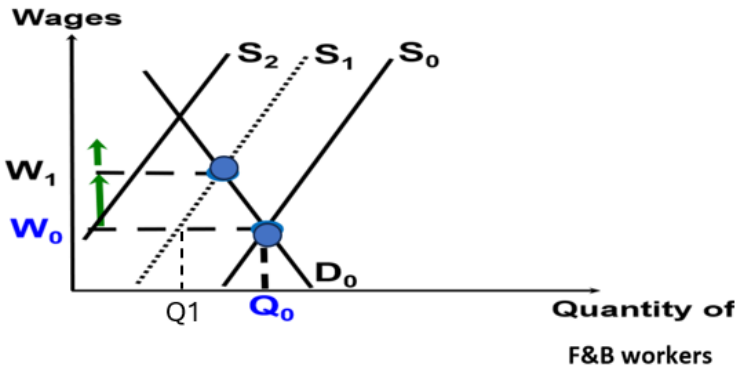
R2: Shortages might still exist due to increase in demand and/or fall in supply of F&B workers ● **Increase in demand for F&B workers** ● There could be an increase in demand for F&B workers due to growing affluence and convenience of eating out. ● Higher disposable incomes lead to more discretionary spending, and a significant portion of this is directed towards dining experiences. ● Busy lifestyles and a preference for convenience have fueled the growth of eating out. ● As incomes rise and lifestyles become busier, more people choose to eat out, driving up the need for F&B workers across all levels of the industry, from chefs and cooks to servers and delivery personnel. ● This will lead to an increase in demand for F&B workers which is **derived** from the demand for F&B business. ● In addition, Singapore, as a popular tourist destination, experiences a surge in demand for F&B services during peak seasons and events. This influx of visitors, combined with the city-state's status as a business and convention hub, increases the demand for F&B workers. ● This increase in demand for F&B workers is represented by the rightward shift of the demand curve from D_0 to D_1. The shortage created at W_0 (Q_0Q1) will cause an upward pressure on the wage leading to an increase in wage rate of F&B workers. However, while the wage rate is rising to eliminate the shortage, **further increase in demand** of F&B workers to D_2 due to the increasing demand for F&B services, will lead to further rightward shift of the demand curve causing the shortage to persist.  	**[DEPTH]** Answer should be contextualised to the F&B workers. **[CLARITY/DEPTH]** Clear explanation of diagram and why shortage still exist despite increase in wages. Students should consider the **SCOPE** of the concepts tested

- **Fall in supply of F&B workers**
- **“Tightened border controls limiting the number of foreign workers”:** this restricts the entry of new foreign workers and potentially impacting the renewal of existing work permits. This is due to stricter immigration policies and more rigorous screening processes, which can make it more difficult for F&B businesses to hire and retain foreign employees.
- Stricter border controls often involve more stringent visa and work permit application processes, potentially delaying or even preventing the entry of foreign workers.
- E.g.: Singapore has implemented dependency ratio ceilings (DRC) for foreign workers in F&B sector. This means there's a limit to the percentage of foreign workers a company can employ. Tightening border controls can further restrict the number of foreign workers allowed to enter, making it harder for businesses to meet their DRC requirements.
- The fall in supply of F&B workers could be due to **long hours and physical demands**
- The demanding nature of F&B work, with long shifts and physically strenuous tasks, can lead to burnout and fatigue. This makes it difficult for workers to maintain a sustainable work-life balance, impacting their overall well-being and potentially leading to them seeking employment elsewhere.
- The long and irregular hours, particularly during evenings and weekends, can significantly impact workers' ability to have a fulfilling personal life, spend time with family and friends, or pursue other interests. This lack of work-life balance is a major deterrent for many potential employees.
- F&B jobs often involve a lot of standing, lifting, and repetitive tasks, which can lead to physical strain and injuries over time. This can be particularly challenging for older workers or those with pre-existing health conditions.
- The negative perception of F&B work as being physically demanding and having poor work-life balance makes it challenging to attract new talent, especially younger workers who may be seeking more flexible and balanced career options.
- The fall in supply of F&B workers will lead to a leftward shift of supply curve from S_0 to S_1. This creates a shortage (Q_0Q1) at W_0 which exerts an upward pressure on the wage rate. While the wage rate is rising to eliminate the shortage, a **further fall in supply** due to continuous attrition of F&B workers will cause a persistent shortage in the market for F&B workers.

and explain demand and supply factors.

[RELEVANCE] Give relevant examples contextualised to F&B workers

[CLARITY/DEPTH] Clear explanation of diagram and why shortage still exist despite increase in wages.



Conclusion:

- The reasons for the existence of shortage of F&B workers are due to the inelastic demand and supply of F&B workers, coupled with the increasing demand and falling supply of F&B workers.
- The acute shortage of F&B workers severely compromised the quality of F&B services in Singapore. Hence, the Singapore government is concerned as it will adversely affect the standard of living of Singaporeans.

[Alternative structure:

R1: Increase in demand with inelastic PES of F&B workers **to explain existence of shortage even with the increase in wage**

R2: Fall in supply with inelastic PED of F&B workers **to explain existence of shortage even with the increase in wage**

Alternative approach:

R1: Unanticipated (unexpected) large increase in demand for F&B workers

R2: Unanticipated (unexpected) large fall in supply of F&B workers**]**

Mark Scheme:

Knowledge, Application, Understanding and Analysis		
L3	Answer is **relevant to question requirements** and covers sufficient **breadth**: ○ Use of demand, supply, PED and PES concepts to explain the **existence of the shortage**. Answer has sufficient **depth**: ○ **rigorous and detailed** economic analysis that demonstrate strong understanding of the use of demand, supply, inelastic PED and PES, to explain the existence of the shortage. ○ **relevant** and **clearly**-labelled DD-SS diagram(s) to support economic analysis	8 – 10

	○ **relevant to the context** of Singapore or any other country, and information in the preamble. For answers that provide a good breadth to explain the existence of the shortage without the use of information in the preamble or apply any context – max 8m	
L2	● Answer is mostly relevant to question requirements (e.g. An undeveloped explanation of the existence of the shortage due to an increase in demand and fall in supply or F&B workers (with the use of information in the preamble) – up to 7m ● Theoretical use of demand and supply analysis (without PED and PES) to explain the existence of the shortage (without the use of information in the preamble) – max 5m ● Economic concepts are relevant but may contain minor inaccuracies. ● Economic analysis is accurate but incomplete or lacks precision. ● Relevant diagrams are used but might not be accurately explained or applied to support economic analysis.	5 – 7
L1	● Question requirements are interpreted inaccurately with no or minimal link to the market of F&B workers. ● Mere listing of demand and supply factors with limited or inaccurate explanation. ● Inappropriate or lack of diagrams.	1 – 4

(b) Discuss possible measures Singapore government can adopt to overcome future shortages of F&B workers. [15]

Intro: To overcome future shortages, government can adopt policies to increase supply and reduce demand of F&B workers. **R1: Measures to reduce demand for F&B workers to reduce future shortages** (i) Government to **subsidise or provide grants** to F&B firms to encourage the use of **technology** and **digitalisation** to reduce reliance on F&B workers. ● Examples of Technology/ Digitalization in F&B: ● **Digital ordering systems (e.g., QR codes, self-service kiosks):** Allow customers to place orders directly, reducing staff workload and order errors. Allow customers to browse menus, place orders, and make payments without staff assistance. Digital platforms facilitate better communication between different departments (kitchen, front-of-house, etc.), reducing errors and delays. E.g.: MacDonalds, Ajisen ● **Mobile ordering apps:** Enable customers to order and pay from their phones, streamlining the ordering process. Digital ordering and payment systems lead to faster service times, reducing wait times and improving customer experience without staff assistance. ● **AI-powered chatbots:** AI-powered chatbots can reduce the demand for F&B workers by automating tasks like order taking, answering FAQs, and managing reservations, freeing up human staff for more complex or customer-facing roles. ● **Robots** can significantly reduce the demand for human F&B workers by automating repetitive, labor-intensive tasks. This includes tasks like greeting	**Approach** of answer **[CLARITY/DEPTH]** Clear explanation and examples contextualized to F&B

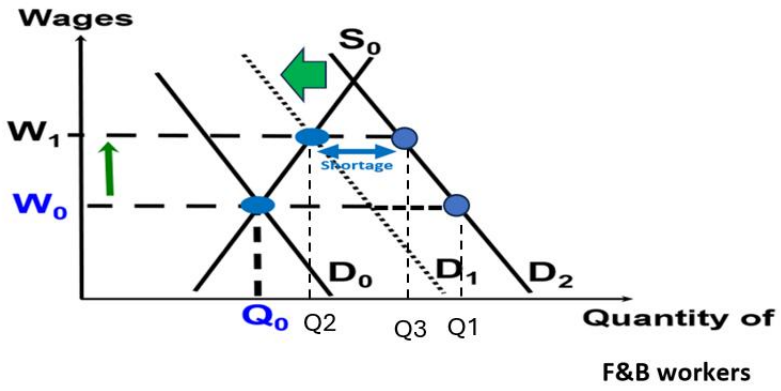
customers, delivering food, and clearing tables, reducing the workload on human servers. Robots can assist with tasks like flipping burgers, preparing pasta, and even making coffee, potentially minimizing the need for specialized chefs or cooks. E.g.: HaiDiLao, Genki Sushi use conveyance belt to serve customers

- **Digital inventory management systems** can reduce the demand for F&B workers. Digital systems can automatically reorder supplies when stock levels fall below predefined thresholds, eliminating the need for manual checks and order placement. Inventory is tracked in real-time, reducing the time and effort required for manual stock counts and reconciliation. Systems can track food waste, helping identify areas where waste is occurring and allowing for adjustments to reduce overproduction or improve storage practices without the need for manual labour.
- Automation of repetitive tasks like order taking, payment processing, and inventory management frees staff to focus on more value-added activities like customer service and food preparation.

By embracing technology and digitalization, F&B businesses can create a more efficient and customer-centric environment, ultimately boosting productivity and reducing demand for F&B workers.

(ii) F&B employers can optimise workforce management: Review staffing requirements and optimize workforce management. Cross train staff to handle multiple roles so as to reduce overall demand on F&B workers.

These measures to reduce the demand of F&B workers can slow down the continuous increase in demand for F&B workers in Singapore. With these measures, demand is at D_1 (instead of D2) hence reducing the future shortage of F&B workers in Singapore.



Limitations

E1: Limitations and trade-off of the measures to reduce demand for F&B workers

- The **high costs of these technologies,** for example, firms need to invest in new hardware and software and train their employees on how to use these new tools, which can add up. Even if the Government subsidize the costs, it may still be insufficient for firms maximise use of technology/digitalisation. This might impede the efforts of the F&B firms in adopting them, hence the fall in demand for F&B workers might be slower than the increase in demand for F&B workers due to growing affluence and convenience of eating out.
- **Cybercriminals** may exploit weaknesses in digital infrastructure, inadequate security protocols, or human error to gain unauthorised access to sensitive

information. All of which can lead to data breaches, identity theft, financial loss, or reputational damage for firms.

R2: Measures to increase supply of F&B workers to reduce future shortages

(i) Government can also **relax the immigration controls for F&B workers.** Government can consider a more targeted and flexible work pass system that recognizes the specific needs of the F&B industry, potentially allowing for easier entry of skilled and semi-skilled workers. Government can review the current levy system, perhaps channeling levy receipts to support businesses in enhancing productivity and adopting automation to reduce reliance on manual labor.

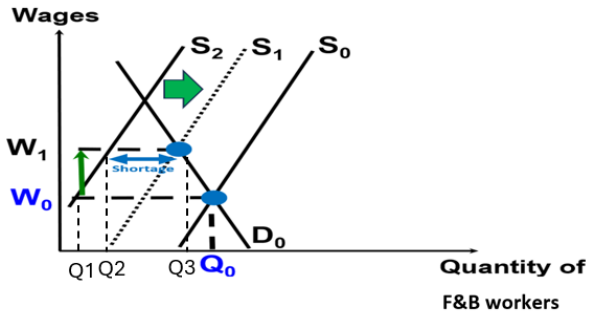
(ii) While restrictions are in place to manage foreign worker dependence, the government could explore strategic adjustments to allow for greater flexibility and increase quota for specific F&B roles where local talent is scarce.

- Government can encourage and give incentives to F&B firms to consider alternative workforce:
  - E.g.: **Hire back-to-work mothers:** This can tap into a valuable talent pool and address labor shortages.
  - **Employ individuals with disabilities:** Provide training and support to empower this group and create a more inclusive workforce.
  - **Train and hire older workers:** Benefit from their experience and work ethic
  - **Offering part-time opportunities** can tap into a wider pool of potential workers, like students or those seeking flexible schedules.

(iii) Government can support F&B firms and to better provide clear career paths and opportunities for advancement to motivate workers to stay long-term. Government can help firms to invest **in training programs such as c**omprehensive training programs to enhance skills, boost confidence, and improve service quality. **Government can also encourage** continuous learning by giving subsidies for F&B workers to expand their knowledge and skills through workshops, seminars, or online courses.

(iv) Government can provide courses to encourage **F&B firms to promote a more positive work environment.** Creating a supportive and respectful workplace is crucial for employee satisfaction and retention. E.g.: Providing benefits like health insurance, paid leave, and flexible working hours can make jobs more appealing. **F&B firms can optimize shift patterns by scheduling s**horter shifts, better rotations, and capped work hours to reduce burnout of F&B workers.

All the above seek to slow down the fall in supply of F&B workers and if well implemented with positive outcomes, might even increase the supply of F&B workers, hence reducing the shortage.



[CLARITY/DEPTH] Clear explanation and examples contextualized to F&B

[Scope] Give different reasons

● The successful implementation of the above measures can slow down the fall in supply from S_1 to S_2, or increase the supply from S_2 to S_1, hence reducing the future shortage of F&B workers in Singapore. **E2: Limitations of increasing the supply of F&B workers** ● Simply relaxing immigration rules and increasing the supply of foreign workers, may hinder wage growth for locals and **exacerbate income inequality**. This is because a larger influx of foreign workers, particularly in low-skilled or lower-paying jobs, can create downward pressure on wages for Singaporean workers in these areas. When there's a larger pool of workers available, especially at the lower end of the wage scale, companies may be less inclined to offer higher salaries to attract or retain local workers. The potential suppression of wages for low-skilled F&B local workers can contribute to a widening income gap between high-income earners and those in lower-paying jobs. ● **Relaxing immigration rules may cause** a dependency on foreign labor, rather than encouraging businesses to innovate and improve productivity. Increased population density due to foreign workers can put a strain on infrastructure, public services, and housing. A large foreign workforce can create challenges in maintaining social cohesion and national identity. ● The recruitment of foreign F&B workers might **compromise the quality** of F&B services due to different culture and language barriers especially for senior citizens who can only converse in local dialects. **Conclusion:** ● In order to reduce the future shortage of F&B workers, both demand and supply of F&B workers must be concurrently tackled. ● **Short-run:** ● Measure to retain current F&B workers by **improving the working conditions** is important. A **positive and inclusive work environment** make employees feel valued and respected and can significantly improve job satisfaction and reduce turnover. ● **Long run:** Using more **technology and digitalization** is more **sustainable** to overcome labour shortages in F&B sector. Robots and machines can operate continuously with minimal downtime, improving overall efficiency and productivity. Compared to labour, robots can maintain consistent standards, reducing errors and variations in food preparation and service. Robots can also enhance safetly as robots can handle hazardous tasks, reducing the risk of accidents and injuries to human workers. Examples of countries that use robots in F&B sector include China, Japan, the United States, Singapore, and Australia.	Limitations Evaluation using CRATES criteria: Time Period

Mark Scheme:

Knowledge, Understanding, Application and Analysis		
L3	Answer is **relevant to question requirements** and covers sufficient **breadth**: ○ Well-developed and balanced explanation of how both reducing demand (R1) and the increasing supply of F&B workers (R2) can be implemented to reduce the future shortage of F&B workers.	8 – 10

	Answer has sufficient **depth**: ○ **rigorous and detailed** economic analysis that demonstrate strong understanding of the use of demand and supply analysis to explain how the future shortages of F&B workers can be addressed ○ **relevant** and **precise** use of economic concepts (demand and supply diagrams); ○ **accurate** and **clearly-labelled** diagrams to support economic analysis ○ Answer is **relevant to** the question and applies to the context of **Singapore** to support the analysis.	
L2	● Answer is mostly relevant to question requirements. ● Economic concepts are relevant but may contain minor inaccuracies. ● Economic analysis is accurate but incomplete or lacks precision (an undeveloped 2-sided answer which explains the demand and supply measures, with some use of examples). ● For a good discussion of R1 or R2, max 5m. ● Attempts to address the context of the question but is incomplete. ● Relevant diagrams are used but might not be accurately explained or applied to support economic analysis.	5 – 7
L1	● Answer is mostly irrelevant to question requirements. ● Economic concepts are largely irrelevant and/or inaccurate. ● Unclear and/or inaccurate economic analysis (an answer which merely lists and describes the measures). ● Lacking in use of diagrams or wrong diagrams are used.	1 – 4
Evaluation		
E3	A summative conclusion that synthesizes the use of both demand and supply solutions to address future shortages of F&B workers.	5
E2	Evaluative judgements about **BOTH** requirements in the body paragraphs that are built on appropriate economic analysis which are **directly relevant** to the question requirement and have **sufficient depth**.	3-4
E1	Evaluative judgement about **one requirement** which are **directly relevant** to the question requirement and contains **sufficient depth**. For example, explaining the **limitations and/or trade off** of the use of demand/supply measures.	1-2

2 Despite Singapore's ambitious target to deploy 2 gigawatt-peak of solar energy by 2030 as part of its green transition plan to reduce carbon emissions, the adoption of renewable energy remains below desired levels. Many households and businesses remain hesitant to invest in renewable energy installations, prompting discussions about the most effective policy interventions to accelerate adoption.

(a) Explain why the free market may result in an under-consumption of renewable energy. [10]

Question Analysis	
Command	Explain why (process explanation)
Content	Reasons for under-consumption of renewable energy ● Positive externalities ● Imperfect information
Context	Renewable energy

Synopsis

This essay examines why free markets lead to under-consumption of renewable energy, focusing on two key market failures: positive externalities and imperfect information. The analysis demonstrates how these failures prevent optimal resource allocation and justify government intervention in Singapore's renewable energy sector.

Introduction - The free market fails to achieve socially optimal renewable energy consumption due to positive externalities and imperfect information that prevent efficient resource allocation. - These failures result in under-consumption of renewable energy relative to the socially optimal level, creating a deadweight loss to society and hindering Singapore's green transition objectives.	Direction of essay
R1: Explain why Positive Externalities lead to under-consumption of Renewable Energy **Step 1: Explain the Cost and Benefit of Consumption** - In consuming renewable energy, consumers (households and firms) would need to consider private costs such paying upfront costs for purchasing and installing renewable energy systems (e.g solar panels), battery as well as maintenance and operational costs - In return, the consumers will be able to enjoy private benefit such as renewable energy's ability to fulfil basic needs, enhance daily living or carry out business operations.	**[DEPTH]** Answer should follow 6 steps approach when explaining about positive externalities. **[RELEVANCE]** Answer needs to include examples to illustrate private costs and benefits of

Step 2: <u>Explain How Consumers choose output to maximise Self Interest. (MPB=MPC)</u>

- To maximize their Net Private Benefit consumers will consume an output where MPB=MPC. From Figure 1, consumers will choose to consume quantity **Qp**

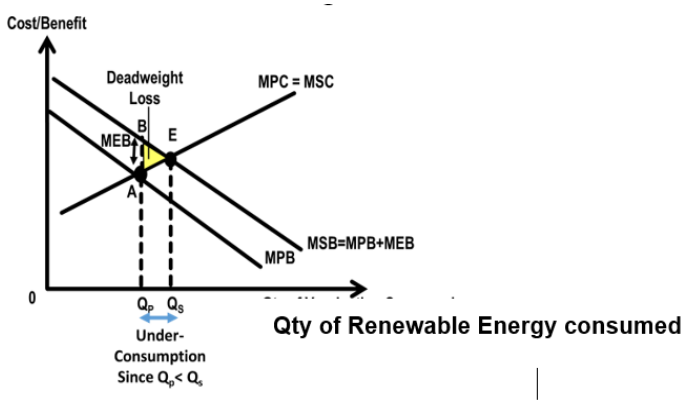


Figure 1: Under-Consumption due to positive externality

<u>Step 3: Explain How Third Parties are affected by the decisions of Consumers</u>

- However, renewable energy consumption generates positive externality which is ignored by the consumers A positive externality gives rise to external benefit which arises when individual actions generate benefits to a third party without the latter having to pay for them.
- Consumers of renewable energy may provide benefits to third parties which could include the local community.
- When consumers switch to renewable energy (e.g. solar energy), they decrease their reliance on fossil fuels, thereby reducing greenhouse gas emissions that contribute to climate change. This environmental improvement benefits the local community through cleaner air, reduced health risks and enjoy savings from having to spend on medical treatments when they fall ill when the air quality is poorer.

Step 4: <u>Explain the Divergence between MPB & MSB</u>

- The existence of positive externalities from the consumption of education creates a divergence between the MPB and the MSB equal to the value of the marginal external benefit, MEB. Where **MSB = MPB + MEB.** Assuming there are no external costs from consuming education, MPC=MSC.

Step 5: <u>Explain how the Socially optimal level of Consumption is obtained (MSB=MSC)</u>

- *Net social benefit* of society will be maximized at the output level where **MSB=MSC** (i.e. only at **Qs**). This is shown in Figure 1.

renewable energy

[ACCURACY] Explanation of MEB should identify clearly who the 3rd party is and link to both tangible and monetary effects.

Step 6: <u>Explain that the Market has Failed</u>

- Consumers will consume the output Qp as they pursue their self-interest. However, society's welfare is maximised at output Qs. Since Qp is less than Qs, there is **under-consumption** from a societal perspective. The market is said to have failed because the consumption level is lesser than the socially efficient level.
- Due to the under-consumption, society's welfare is not maximised. At output Qp, MSC<MSB, hence Net Social Benefit is not maximised. The output between Qp and Qs, adds more to social benefit than social cost (i.e MSC<MSB).

Hence society welfare could have improved by area ABE if consumption takes place at output Qs instead of output Qp. This area ABE is known as

R2: Explain why Imperfect Information leads to Under-Consumption of Renewable Energy

Step 1: <u>Explain the Costs and Benefits of Consumption</u>

- In consuming renewable energy, consumers would make decisions based on information that they perceive to be accurate. However, they make lack the actual or accurate information on their cost or benefits of consuming renewable energy
- To illustrate this, **let's assume that consumers have imperfect information on the true costs of renewable energy.**
- **The private benefits of renewable energy** incurred by the consumer have been explained earlier under positive externalities.
- On the other hand, the **perceived private costs** would consist of only the upfront as well as maintenance and operational costs of solar energy system.
- However, consumers are unaware how much the solar technology costs have fallen as well as long-term costs savings of renewable energy installations. Furthermore, consumers often lack technical knowledge about renewable energy systems, including installation requirements, maintenance needs, and performance expectations. This uncertainty increases the perceived risk and complexity of adoption, effectively raising the perceived private marginal cost above the **actual private cost.**

Step 2 <u>Explain How Consumers choose output to maximise Self Interest. ($MPB_P = MPC_A$)</u>

- Weighing costs and benefits from consumption, rational consumers would maximize their Net Private Benefit by consuming an output where **MPC_P=MPB** i.e perceived MPC= actual MPB. From Figure 2, consumers will choose to consume quantity **Q_P**.

DEPTH] Answer should follow 5 steps approach when explaining about imperfect info

[RELEVANCE] Answer needs to include examples to illustrate private benefits, perceived costs vs actual costs.

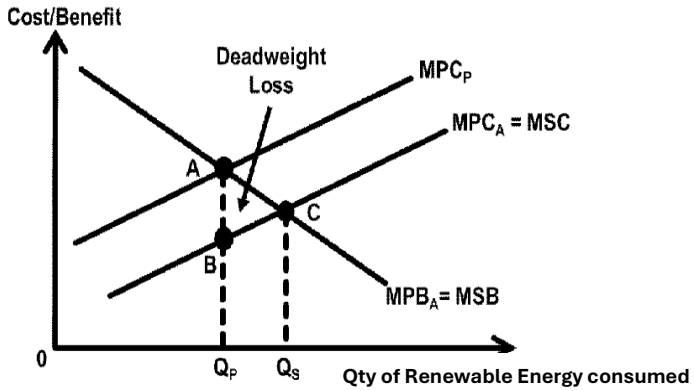


Figure 2: Imperfect Information in the market for renewable energy

Step 3: <u>Explain the Divergence between MPC_A & MPC_P</u>

- When consumers underestimate the true costs, the perceived MPC i.e MPCp will be more than actual MPC i.e MPCa. Thus Imperfect Information, creates a divergence between the **MPC_A & MPC_P.**

Step 4: <u>Explain how the Socially optimal level of Consumption is obtained</u>

- With the absence of externalities, MSB= MPB_A while MSC= MPC_A. Hence the output where net social benefit is maximized i.e Qs occurs where MSB=MSC or MPB_A=MPC_A.

Step 5: <u>Explain that the Market has Failed</u>

- Consumers will consume the output Q_P as they pursue their self-interest based on the lack of information. However, society's welfare is maximised at output Q_S. **Since Q_P is less than Q_S**, there is an **under-consumption of renewable energy** from a societal perspective. The market is said to have failed because the consumption level is lower than the socially efficient level.
- Due to the under-consumption by consumers, society's welfare is not maximised. At output Q_P, MSC<MSB, hence Net Social Benefit is not maximised. The output between Q_P and Q_S, adds more to social benefit than to social cost (i.e MSC<MSB). Hence society's welfare could be improved by area ABC if consumption takes place at output Q_S instead of output Q_P. The area ABC is known as the ***deadweight loss*** to society.

<u>Conclusion</u>

- The free market's failure to achieve optimal renewable energy consumption stems from two fundamental market failures: positive externalities and imperfect information.
- Understanding these failures provides the economic rationale for government intervention through two possible approaches, command and control and free market forces

Mark Scheme

Knowledge, Understanding, Application and Analysis		
L3	● A **clear** and coherent answer that is **relevant** to the question requirements and applied to its context.	8 – 10

	● Answer covers sufficient **scope** with <u>*at least two*</u> distinct requirements (i.e. areas of analysis): ○ **R1: Explain why positive externalities leads to under-consumption of renewable energy** ○ **R2: Explain why imperfect information leads to under-consumption of renewable energy.** ● Answer is **accurate** and has sufficient **depth**: ○ Detailed and accurate explanation of economic concepts with **analytical** application to the question. ○ Economic analysis is supported by accurately labelled and explained diagrams (i.e. cost-benefit framework) and relevant real-world examples.	
L2	● Answer is **mostly relevant** to the question requirements. ● Answer **lacks scope** (e.g. explains only either positive externalities or imperfect information) ● Answer may contain **minor inaccuracies** and has **insufficient depth** with **cursory** application to the question (e.g. incomplete or inaccurate explanation of economic concepts, incomplete explanation of diagrams and little or no use of real-world examples).	5 – 7
L1	● Answer is **mostly irrelevant** to question requirements. ● Economic concepts are not explained and/or are **inaccurate**. ● Economic analysis **lacks coherence** and **accuracy**. ● Lacking in use of diagrams or wrong diagrams are used.	1– 4

(b) Discuss whether command-and-control measures are more effective than market-based solutions in promoting renewable energy adoption in Singapore. [15]

Question Analysis	
Command	Discuss whether (Two-sided Answer)
Content	Command-and-control measures and Market-Based Solutions in promoting renewable energy adoption ● How it works and effectiveness
Context	Renewable energy in Singapore

Synopsis

This essay examines the relative effectiveness of command-and-control measures versus market-based solutions in promoting renewable energy adoption in Singapore. The analysis focuses on how these policy approaches address two key sources of market failure: positive externalities from renewable energy adoption and imperfect information amongst consumers and businesses. The essay evaluates both approaches through economic analysis, considering Singapore's specific context and constraints.

<u>Introduction</u> - This essay examines the relative effectiveness of command-and-control measures versus market-based solutions in promoting renewable energy adoption in Singapore. - The analysis focuses on how these policy approaches address two key sources of market failure: positive externalities from renewable energy adoption and imperfect information amongst households and businesses. - The essay evaluates both approaches through cost-benefit analysis, considering Singapore's specific context and constraints.	Direction of essay

R1: Explain how command-control measures can address the under consumption of renewable energy due to imperfect information

- **Reiterate how imperfect info causes under-consumption of renewable energy.**
  - Imperfect information represents a significant barrier to renewable energy adoption, particularly regarding long-term cost savings and installation processes, hence consumers tend to overestimate the true costs of renewable energy consumption.
  - Consumers are consuming at Qp where MPCp=MPB but the socially optimal level is Qs where MPCa=MPB. This results in under-consumption (Qs>Qp) and DWL of area ABE
- **Explain how command and control measure (e.g. mandatory solar panel installation for new buildings) can raise renewable energy adoption in Singapore**
  - Command-and-control measures can effectively overcome these information barriers by mandating adoption regardless of individual knowledge levels or costs perceptions.
  - One such command-control measures would be mandatory solar panel installations for new buildings (both commercial and residential buildings). In Singapore's context, Building and Construction Authority (BCA) would enforce compliance through the building permit process, with certificates of statutory completion conditional on solar system verification.
  - When implemented, mandatory solar energy installation usually requires monitoring by the government. For example, BCA inspectors would conduct site inspections to verify system installation. In addition, a heavy penalty for non-compliance must be in place. For example, failure to install solar systems according to approved specifications results in stop-work orders until compliance is achieved. This is because consumers are forced into a decision that does not allow them to maximise their net private benefit. If penalties are low, consumers may choose to ignore the regulation and risk being caught.
  - As shown in Figure 1, if the mandatory solar panel installation is set at Qs, this would eliminate the problem of under-consumption and eliminate the deadweight loss of area ABC. This is because consumption would be at the socially optimal level of Qs.

Mandatory consumption at Qs

[SCOPE]

Answer should address both sources of market failure from part a)
- positive externalities and imperfect information

[DEPTH]

Need to provide cost-benefit analysis when explaining how command and control measure works

[RELEVANCE]

Need to provide details and examples of how the measure will be carried out by the relevant authorities for compulsory consumption

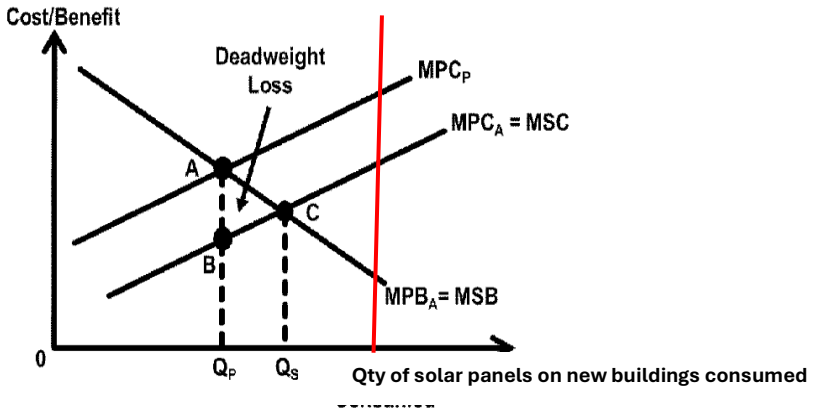


Figure 1: Mandatory consumption of solar panels for new buildings

-

EV(R1): Evaluation of Command & Control Measures

- **Advantages**
  - Command-and-control provides certainty in outcomes. Mandatory solar panel installation for new buildings provides absolute certainty in achieving renewable energy capacity targets. This certainty enables precise long-term planning for Singapore's 2030 renewable energy targets,
  - Singapore's small size and high population density create unique advantages for command-and-control approaches. Singapore's high enforcement capacity reduces administrative costs of command-and-control measures. This cost advantage strengthens the case for regulatory approaches in addressing information failures.
- **Disadvantages**
  - Mandatory solar installation could lead to higher cost of production and reduce profit of property developer and building owners. This could reduce foreign investment in Singapore property markets which could shift aggregate demand leftward through decreased investment spending, reduced wealth effects from lower property prices, and multiplier effects across construction and related sectors, potentially reducing GDP. Increased construction costs could be passed on to tenants which will lead to higher rental costs which increase business operating expenses across the economy, creating cost-push inflationary pressure.
  - Hence, mandatory solar installation could lead to significant resistance from property developers and building owners. Government resources devoted to managing opposition, conducting consultations, and defending legal challenges represent opportunity costs that could otherwise support productive economic activities.
  - It does not address the root cause of imperfect information which would be better dealt with via moral suasion rather than command and control measures.

[RELEVANCE]

Need to contextualise and consider Singapore's

characteristics when evaluating the measures.

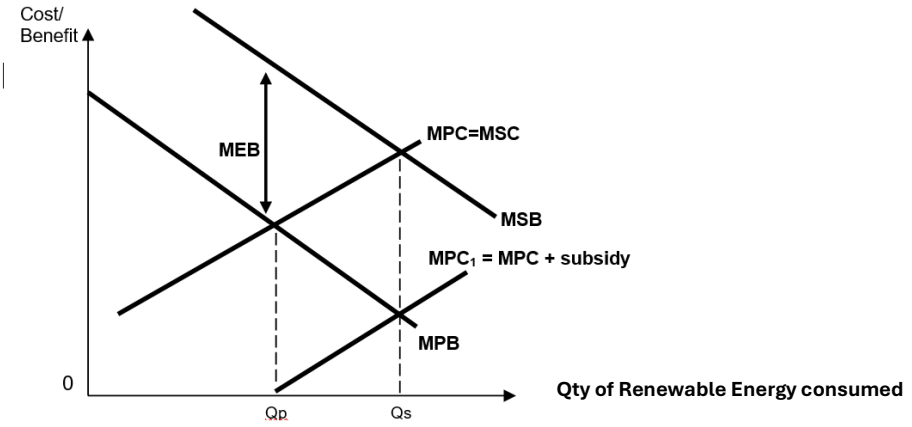
- **Reiterate how positive externalities cause under-consumption of renewable energy.**
  - Positive externality in consumption of renewable eneregy has resulted in an inefficient allocation of resources i.e under-consumption of education (Qs>Qp) as seen in Fig 1. Consumer consuming Qp where MPB=MPC results in a DWL (ABE)
- **Explain how market-based solutions (e.g. demand-side subsidies for solar panel) can raise renewable energy adoption in Singapore**
  - Market-based solutions such as subsidies for renewable energy or carbon taxing can make renewable alternatives more attractive through price signals rather than mandates.
  - The government can provide either demand-side or supply-side subsidy to correct the under-consumption levels of renewable energy in the market. In the case of demand-side subsidy, the government subsidises the consumer directly by reducing the amount that consumers have to pay. For example, grants in the form of direct payments can be given to consumers to help to cover a portion of the upfront capital costs of purchasing and installing renewable energy systems. Alternatively, rebates in terms of partial refunds of purchase costs can provided after the renewable energy system has been installed and verified.
  - 

Figure 2: Demand-side subsidies of renewable energy

  - With reference to Figure 2, when government provide subsidy to the consumers installing solar panels, the marginal private cost for consumers is reduced. To achieve the socially efficient level of consumption, the subsidy given should be equated to the MEB. With the subsidy, the consumer's MPC will decrease by MEB (the subsidy). With a new MPC ie. MPC1, consumers will consume the quantity that maximises their Net Private Benefit by equating MPC1=MPB i.e quantity, Qs. This quantity, Qs, is identical to the socially optimal level of output

DEPTH]

Need to provide cost-benefit analysis when explaining how the market-based solution works

[RELEVANCE]

Need to provide details and examples of how the measure will be carried out by the relevant authorities for demand-side subsidy

EV(R2) : Evaluation of Market-based Solutions

- **Advantages**

- Consumer subsidies for renewable energy are more cost-effective than mandates because they create natural self-selection where building owners with the lowest costs and highest benefits adopt first, maximising environmental benefits per dollar spent while avoiding the deadweight losses from forcing unsuitable high-cost installations. - The market-based approach provides superior implementation flexibility as governments can easily adjust subsidy levels in response to changing technology costs, economic conditions, or budget constraints without requiring complex regulatory restructuring, whilst voluntary participation eliminates enforcement costs and political resistance associated with mandatory schemes. ● **Disadvantages** - There is always opportunity cost of allocating more funds to subsidies renewable energy consumption. There may be a need for the government to cut down expenditure in other areas to finance the subsidy. If funds are reduced in education or healthcare, it may reduce the standard of living of the country. - The value of the external benefit is mostly arbitrary and very difficult to estimate due to the external benefit being intangible and differing between the various third parties. This makes it difficult for the government to determine the right amount of subsidy to give the consumers. There is a possibility that the government may under or over-subsidise the consumption of renewable energy.	**[RELEVANCE]** Need to contextualise and consider Singapore's characteristics when evaluating the measures.
<u>Synthesis / Evaluative Judgement</u> - The effectiveness of command-and-control versus market-based measures in promoting renewable energy adoption depends critically on the specific market failures being addressed and Singapore's unique characteristics. For correcting positive externalities, market-based solutions such as subsides offer incentives, allowing optimal resource allocation based on varying marginal costs across adopters. However, command-and-control measures may be more effective in addressing imperfect information, particularly in Singapore's context where strong institutional capacity enables effective implementation and monitoring. - The optimal policy approach likely involves a hybrid strategy that leverages the strengths of both instruments. Initial command-and-control measures could overcome information barriers and establish minimum adoption levels, whilst market-based mechanisms could drive efficiency improvements and innovation in the longer term. - Other measures like public campaigns to educate the actual costs of consuming solar energy (e.g. highlighting the falling costs of solar energy) would be also important to address imperfect information that is causing under-consumption of solar energy.	

Mark Scheme

Knowledge, Understanding, Application and Analysis

L3	○ A **clear** and coherent answer that is **relevant** to the question requirements and applied to its context. ○ Answer covers sufficient **scope** with *<u>at least two</u>* distinct requirements (i.e. areas of analysis): ● **R1: Explain how Command-control measures can be useful in raising the consumption of renewable energy** ● **R2: Explain how Market-Based solutions can be useful in raising the consumption of renewable energy** ○ Answer is **accurate** and has sufficient **depth**: ○ Detailed and accurate explanation of economic concepts that demonstrate strong understanding of measures to correct information failure. ○ Economic analysis is supported by accurately labelled and explained diagrams (i.e. cost-benefit framework) and relevant real-world examples.	8 – 10
L2	● Answer is **mostly relevant** to the question requirements but may **lack some clarity** and coherence. ● Answer **lacks scope** (e.g. explains only one measure to correct information failure) ● Answer may contain **minor inaccuracies** and has **insufficient depth**: ○ Explanation of economic concepts is incomplete or contain minor inaccuracies, with **cursory** attempts at application to the question. ○ Economic analysis is supported by use of diagrams but with incomplete explanation and little or no use of real-world examples.	5 – 7
L1	● Answer is **mostly irrelevant** to question requirements. ● Economic concepts are **largely irrelevant** and/or **inaccurate**. ● Economic analysis **lacks coherence** and **accuracy**. ● Lacking in use of diagrams or wrong diagrams are used.	1 – 4
E3	● Two well-explained evaluative judgements that are supported by arguments presented in the answer and linked to the context of the question PLUS a summative conclusion.	5
E2	Two evaluative judgements, one of which is explained.	3 – 4
E1	● Evaluative statements that are unexplained or not supported by the arguments presented in the answer OR a judgement that is not linked to the context of the question; OR ● One explained evaluative judgement.	1 – 2

Question 3

Digital platforms in sectors like ride-hailing and food delivery have transformed the way services are accessed and delivered. The structure and behaviour of firms in these markets raise interesting questions about how competition works in the digital economy.

(a) Explain why digital platform market such as ride-hailing (e.g. Grab) or food delivery apps (Foodpanda, Deliveroo) might be considered to be an oligopoly and how economic theory suggests this market structure would affect the firms' pricing and output decisions. [10]

Question Analysis	
Command	Explain
Content	• Application of oligopolistic market structure characteristics on digital platform market • Explain how collusive or non-collusive oligopolistic market structure model affects firms' pricing and output decisions
Context	Digital platform market

Synopsis:

Students are expected to explain why digital platform market is considered to be an oligopoly by applying the characteristics of an oligopoly market structure to this market.

For the second part of the question, students are expected to explain that firms in the digital platform market can be operating under collusive or non-collusive oligopolistic model and how one of these 2 models will affect pricing and output decisions.

Introduction The oligopoly market structure is characterised by a few large firms, nature of product produced, high barriers to entry and interdependence between firms. I will be using these characteristics to explain why firms in the digital platform market are considered as to be oligopoly.	Direction of essay
Body **Requirement 1: Explain why firms in the digital platform market are considered to be oligopoly** ***Note: Explanation of high BTEs and mutual interdependence must be included.*** i. A few dominant firms in the digital platform market such as ride hailing or food delivery apps There are a few relatively large firms dominating the digital platform market in ride-hailing in Singapore e.g. Grab (holding roughly 50% of the market share), Gojek (holding about 17% of the market share), ConfortDelGro (holding about 15% of the market share).	**[Accuracy]** Explanation of high BTEs and mutual interdependence are explained accurately i.e. without major errors. **[Depth]** Explanation of high BTEs covers natural &/or artificial BTEs with real world examples.

As for food delivery apps, firms like GrabFood (holding about 56% market share), Foodpanda (holding about 35% market share) are dominating the market in Singapore. 'Fewness' implies that these firms are able to set their own price. The small number of firms present in the market would also mean that each firm produces a substantially large output and is able to reap internal economies of scale. Changes in output of the large firm will affect the market output. ii. High Barriers to Entry The oligopoly market consist of substantial barriers to entry. Barriers to entry are obstacles that prevents new competitors from competing on an equal basis with established firms in an industry. These barriers may be naturally existing or artificially created by firms or by the government. Barriers to entry (BTEs) in the digital platform market are high due to: • *High Economies of Scale* - Big players spread their fixed costs (app development, AI matching systems, cloud servers, marketing, compliance) over millions of transactions. - Firms like Grab are super-apps, leveraging the same customer base for ride-hailing, food delivery, payments, and financial services, hence lowering average costs. • *Brand Loyalty & Customer Switching Costs* - Heavy spending on promotions, discounts, and loyalty schemes (GrabRewards, Foodpanda vouchers) ties customers into a particular ecosystem. - Many users already have stored payment methods, points balances, and subscription passes (e.g. GrabUnlimited), which raise switching costs. This deters the entry of potential rivals, enabling incumbent firms to retain supernormal profits earned in the long run. iii. Nature of product: Partly homogeneous but differentiated The products/service that firms in the digital platform market produced are partly homogeneous but differentiated. In the case of ride hailing, the service (a car ride from A to B) is fairly homogeneous across Grab, Gojek, ComfortDelGro, TADA, Ryde. Differentiation comes in through:	Explanation of mutual interdependence covers the consideration of its rival's actions when deciding to change price or output. **[Scope]** Explanation of high BTEs covers at least two types. Preferably, the two types of BTEs should be natural and artificial.

- Pricing & Promotions - Service Features - App Experience - Ecosystem Integration In the case of food delivery app, the base product (food delivered from a restaurant to your doorstep) is homogeneous. Differentiation comes in through: - Merchant Partnerships - Delivery Speed & Coverage - Pricing, Subscriptions, Discounts - Brand Image - User Interface & Features iv. Mutual interdependence Interdependence between firms is a unique feature that is only present in the Oligopoly market structure. The small number of large firms in the digital platform market in Singapore ensures interdependence, where each firm is aware that its future prospects depend not only on its own policies (pricing or otherwise), but also those of its rivals, thus creating uncertainties in such markets. When a firm wants to change its price or output, it will consider the other firms' possible reactions before actually proceeding with the change. It has to make certain assumptions about its rivals' possible response in order to make a decision.	
Requirement 2: Explain how firms in the oligopoly market structure would affect their pricing and output decisions The small number of firms in the digital platform market ensures mutual interdependence, where each firm is aware that its future prospects depend not only on its own policies (pricing or otherwise), but also those of its rivals, thus creating uncertainty in such markets. When a firm wants to change its price or output, it will consider the other firms' possible reactions before actually proceeding with the change. It has to make certain assumptions about its rivals' possible response in order to make a decision. For example, if Grab wants to lower its price, it may suspect that rival firm Gojek will follow suit and hence may choose not to lower its price. This can be seen in the kinked demand curve where firms will match price decreases and not price increases, firms initiating a price cut or raising prices will experience falling total revenue. Thus, firms will be reluctant to change current prices, leading to price rigidity. As seen from figure 1, increase in price above P will results in price elastic demand for Grab as rivals keep their prices unchanged. Fall in price below P will result in price inelastic demand as rivals follow the reduction in price. Either outcomes will lead to a fall in total revenue.	**[Clarity]** Kinked demand curve is clearly drawn and labelled. Explicit / tacit collusion diagram is clearly drawn and labelled. **[Accuracy]** Kinked demand curve & explicit / tacit collusion diagram are correctly drawn and explained.

Therefore, Grab will not change its price as long as MC cuts MR between E and F on diagram. Hence, 'Price Rigidity' occurs.

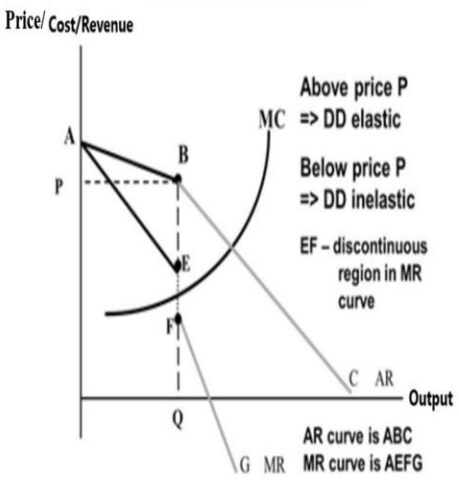


Figure 1

Some firms tacitly (by an unspoken agreement) collude by watching each others' prices to avoid price wars or competitive advertising. Firms may choose to follow the prices set by a firm whom they consider a leader in the market.

The leader could be the largest or dominant firm (e.g. Grab) in the market known as dominant price leadership or a firm whose prices reflect market conditions in the most satisfactory way, known as barometric price leadership.

Hence the leader could choose to lower its price perhaps due to falling demand in the market or even falling cost of production. Once the leader lowers its price, other firms would collude.

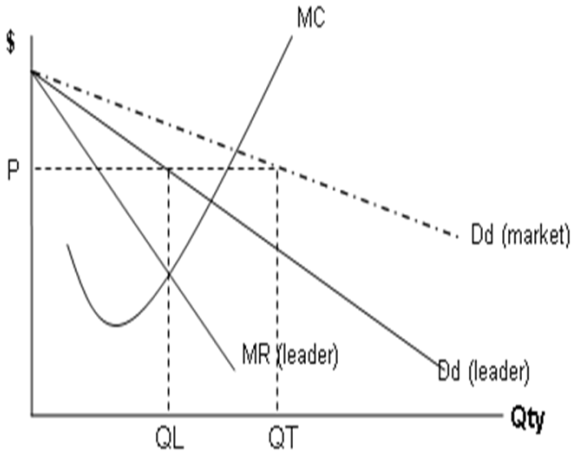


Figure 2

For example, the market leader such as Grab may choose a lower price P as shown in Figure 2. In order to maximise profits, the leader will produce where marginal revenue is equal to its marginal cost (QL) and charge a price (P). At this price the market demand would be at QT. The followers would therefore supply the portion not supplied by the leader i.e. QL – QT at the same price

The explanation about price rigidity is explained correctly i.e. PEDs are correctly identified above and below P.

[Depth]

PED concept is used to explain why total revenue falls when firm raises or decreases its price, which led to price rigidity.

Explanations about how collusive model affects price and output decisions must include the type of price leadership model, why the firm was chosen as the price leader, how the price leader determines price and output, amount that other firms supply.

[Scope]

Explanation of how oligopoly market structure affects price and output decisions must include both collusive and non-collusive models.

(P). This theory assumes that all firms want to maintain a constant market share and therefore, follow lower price.	
Conclusion Given the few dominant firms, high barriers to entry and partly homogeneous but differentiated nature of product, firms in Singapore's digital platform market operate under an oligopoly market structure. The existence of mutual interdependence between these oligopolistic firms i.e. either collusive or non-collusive model suggests that price tend to be rigid and that output remains unchanged at the profit maximising level.	

Mark Scheme:

Knowledge, Application, Understanding and Analysis		
L3	● A **clear** and coherent answer that is **relevant** to the question requirements and applied to its context. ● Answer covers sufficient **scope** with **at least two** distinct requirements (i.e. areas of analysis): - Requirement 1: Explain why firms in the digital platform market are considered to be oligopoly. - Requirement 2: Explain how firms in the oligopoly market structure would affect their pricing and output decisions – either collusive (i.e. price leadership model) or non-collusive (i.e. kinked demand curve). ● Answer is **accurate** and has sufficient **depth**: - Detailed and accurate explanation of economic concepts with **analytical** application to the question. - Economic analysis is supported by accurately labelled and explained diagrams (i.e. Cost-revenue analysis) and relevant real-world examples.	8–10
L2	● Answer is **mostly relevant** to the question requirements. ● Answer **lacks scope** (e.g. considers only the first or second requirement). ● Answer may contain **minor inaccuracies** and has **insufficient depth** with **cursory** application to the question (e.g. incomplete or inaccurate explanation of economic concepts, incomplete or no explanation of diagrams and little or no use of real-world examples).	5–7
L1	● Answer is **mostly irrelevant** to question requirements. ● Economic concepts are not explained and/or **inaccurate**. ● Economic analysis **lacks coherence** and **accuracy**. ● Lacking in use of diagrams or wrong diagrams are used.	1–4

(b) Discuss the most appropriate strategy that a firm in the digital economy could adopt if its objective was to reduce the competition that it faces. **[15]**

Question Analysis	
Command	Discuss
Content	• Explain 2 strategies to reduce competition – one should be pricing and the other non-pricing strategy • Explain the limitations of pricing and non-pricing strategies
Context	Digital economy

Synopsis:

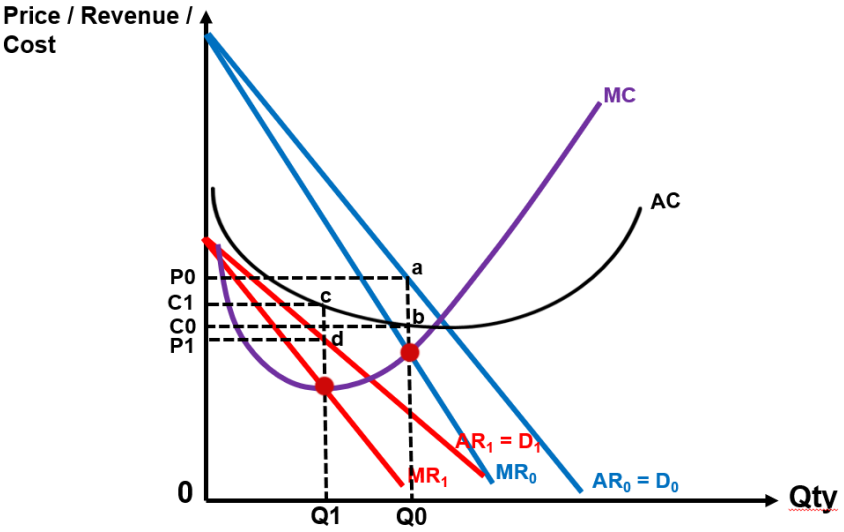
Students are expected to explain one pricing and one non-pricing strategy to reduce the competition that a firm in the digital economy faces with cost-revenue framework and diagrams. They are also expected to explain the limitations of these two strategies in reducing competition.

Introduction Digital platforms in sectors like ride-hailing and food delivery have seen increasing competition in recent years because of lower barriers to entry due to e.g. open licensing & regulation by the Land Transport Authority (LTA), which allowed multiple private hire operators to enter the market under regulated conditions and also encouraged digital innovation, creating a favourable environment for app based entrants like Gojek and Deliveroo to contest the market. In the light of increased competition, large firms in digital platform sectors like Grab would adopt pricing and non-pricing strategies to raise back the barriers to entry and thus reduce the competition it faces.	Direction of essay
Body **Requirement 1:** • **Explain the effect of increased competition on firms in the digital platform sectors like Grab** • **Explain how Grab would use predatory pricing to reduce the competition it faces** Increased competition from firms like Gojek, Deliveroo, Foodpanda etc… will cause the demand for ride hailing and food delivery services to be more price elastic as there are more substitutes available. The demand for Grab services will likely decrease as the emergence of competitors offering differentiated	**[Clarity]** Cost-revenue diagram is drawn and labelled clearly. [Accuracy] There are no errors in the explanation of how increased competition has

services will alter consumers' tastes and preferences and draw some of them away from using Grab services.

As seen from Figure 3, AR1 & MR1 curves become more gentle given that demand is now more price elastic due to availability of substitutes. AR & MR curves will also shift to the left from AR0 & MR0 to AR1 & MR1 due the decrease in demand. The initial price and quantity at the profit maximising output level (MR0 = MC) is P0 and Q0 respectively. Due to the decrease in demand and demand becoming more price elastic, price and quantity fell to P1 and Q1 respectively at the new profit maximising output level (MR1 = MC). As such, the initial supernormal profits earned by Grab at P0abC0 might be reduced to a subnormal profit P1dcC1, if Grab does not respond with any strategies to reduce the competition it faces.

Figure 3



One way of driving rival firms out of the market is to engage in predatory pricing. Predatory pricing occurs when a firm sells a good or service at a price below cost (or very cheaply) with the intention of forcing rival firms out of business. From Figure 4, Grab charged below AC i.e. charge P1 instead of P0. In this way the firm will be selling a larger output and be able to dominate the market.

Predatory pricing was undertaken by Grab as it has sufficient past profits to cope with the losses incurred in the process. e.g. the company has previously run aggressive promotions (e.g. $5 rides, free deliveries) when new competitors like Uber or Gojek tried to expand in Singapore. **Smaller competitors struggled to match these subsidies, which deterred them or slowed expansion. Eventually, Uber exited Singapore in 2018 and sold its operations to Grab.**

Over time, rival firms might not be able to cope with the losses incurred as a result of matching the low prices set by this firm and choose to exit or not enter the market. This results in Grab increasing its market share and corresponding level of market power.

affected the incumbent firm.

Cost-revenue diagram is correctly drawn and labelled.

[Depth]

Cost-revenue framework is used to explain the effects of increased competition on firms in the digital platform sectors like Grab.

Real world examples are given.

[Clarity]

Cost-revenue diagram is drawn and labelled clearly.

Pricing strategy is clearly identified as limit or predatory pricing.

[Accuracy]

The type of pricing strategy was reflected accurately on the cost-revenue diagram.

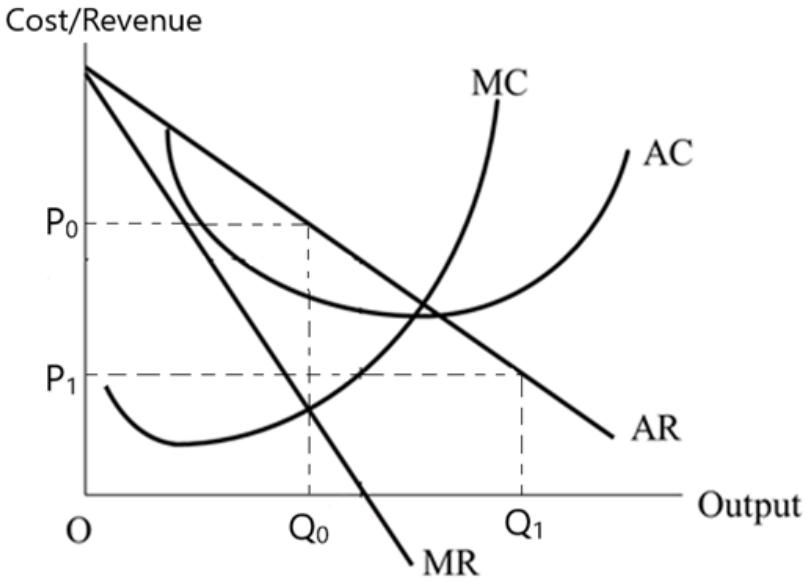


Figure 4

Cost-revenue diagram is correctly drawn and labelled.

[Relevance]

Explanation of the pricing strategy was linked to how it can help to reduce competition.

[Depth]

Cost-revenue framework was used to explain how predatory pricing works.

Real world examples pertaining to context were given.

Evaluation for requirement 1

In the short-run, consumers may benefit temporarily from the lower prices and gain increased consumer surplus. However, in the long-run, after the competitors have exited, Grab may raise prices above competitive levels, which was what happened when Uber exited. Therefore, consumers will end up paying higher prices and thus face a decrease in consumer surplus.

Furthermore, with reduced competition, Grab will not have the incentive to improve on its product offerings and service, since demand has become more price inelastic, given that there are fewer substitutes available. Hence, there will be lesser variety and better quality products and services for consumers to enjoy.

Predatory pricing is often illegal under competition law in Singapore. Thus, Grab could face investigations, fines, or be forced to alter pricing strategies. The government could impose AC or MC pricing on Grab, which will cause it to earn normal profits (AC pricing) or lesser supernormal profits / subnormal profits (MC pricing). Consumers will gain as they pay lower prices as a result

[Scope]

Evaluation considered different perspectives like time period, impacts on various stakeholders etc…

of government intervention. However, Grab might not be able to engage in product and process innovation through R&D due to the lack of funds as it now makes lesser profits. Therefore, consumers will not get to enjoy more variety and better quality products and services.	
Requirement 2: Explain how Grab would use non-price strategy to reduce the competition it faces **Note: Students can choose any of the following non-price strategies:* • *Growth & mergers* • *Diversification* • *Product innovation* • *Process innovation* <u>Product innovation</u> Grab evolved from a ride-hailing service into a "super app" offering food delivery (GrabFood), parcel delivery (GrabExpress), digital payments (GrabPay), and even financial services (loans, insurance). It has also introduced app features such as subscription packages (GrabUnlimited), rewards programs, and gamification to keep users engaged. As a result, Grab has successfully differentiated itself from its competitors, thus causing the demand for its products and services to be more price inelastic (represented by steeper AR & MR curves, AR1 & MR1 in Figure 5). Furthermore, such product innovations have changed the tastes and preferences of consumers favourably for Grab's products and services, hence increasing the demand (represented by the rightwards shift of AR & MR curves from AR0 & MR0 to AR1 & MR1). **This differentiates Grab from rivals and reduces the degree of substitutability, making customers less likely to switch, hence rival firms will face a decrease in demand for their services. Furthermore, by innovating through reward systems (GrabRewards), subscription bundles (GrabUnlimited), or seamless payment (GrabPay), Grab locks in users, which again will lead to a decrease in demand for rival firms' services. Therefore, competition form rival firms will be reduced.**	**[Clarity]** Cost-revenue diagram is drawn and labelled clearly. **[Accuracy]** Cost-revenue diagram is correctly drawn and labelled. **[Relevance]** Explanation of product innovation was linked to how it can help to reduce competition. **[Depth]** Cost-revenue framework was used to explain the effects of

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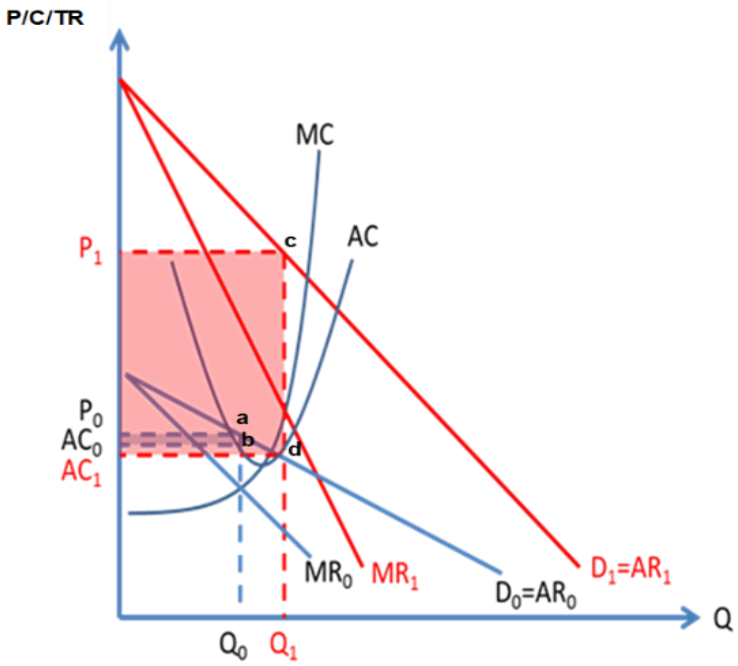

Figure 5
</td>
<td>product innovation on the incumbent firm.

Reasons why product innovation increased demand and caused demand to be more price inelastic was adequately explained.

Real world examples pertaining to context were given.</td>
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OR

<u>Acquisition and diversification</u>

Grab acquired Uber’s Southeast Asian operations in 2018, reducing a key rival, thus increasing its market power by reducing the number of substitutes available. Increased market power of Grab has raised entry barriers because a new entrant would now need significant resources to challenge Grab’s dominant position. As a result, demand for its products and services would be more price inelastic (represented by steeper AR & MR curves, AR1 & MR1 in Figure 5) due to fewer substitutes and demand would increase as well (represented by the rightwards shift of AR & MR curves from AR0 & MR0 to AR1 & MR1 in Figure 5).

Grab has also diversified into areas like finance, logistics, and digital services beyond its core ride-hailing business. This helps to reduce competition as consumers might stay with Grab because they like the convenience of one app for transport, meals, payments, even if another app is slightly cheaper in one service. In addition, Grab has built a “super-app ecosystem” e.g. a user orders lunch via GrabFood, pays with GrabPay, earns GrabRewards points, then uses those points to offset their evening Grab ride. This ecosystem locks in users and makes it harder for competitors like Gojek or Deliveroo to lure them away with price alone as Grab has reduced the substitutability of its app services and altered the tastes and preferences of consumers to gravitate towards using Grab for a range of services.
</td>
<td>[Clarity]

Cost-revenue diagram was drawn and labelled clearly.

[Accuracy]

Cost-revenue diagram was correctly drawn and labelled.

[Relevance]

Explanation of acquisition and diversification were linked to how it can help to reduce competition.</td>
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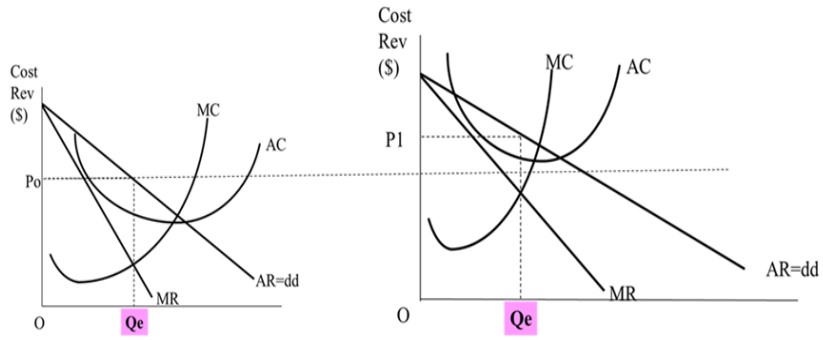
Merger and diversification has also enabled Grab to enjoy internal economies of scale as it is able to spread fixed costs (marketing, R&D, tech infrastructure) across services, which lowers the average costs and allows Grab to charge a lower price for their products and services. **New firms wanting to enter the industry may not be able to enjoy such cost advantages and hence may not be able to complete with the low prices charged by Grab.** This creates a barrier to new firms trying to enter the industry. From Figure 6, the price charged by Grab, P0 (dotted line) is lower than the average cost, AC, of the rival firm. Hence, the low prices act as a barrier to entry for the rival firm as it is unable to charge such a low price given its cost condition.  **Grab** **Rival firm** **Figure 6**	**[Depth]** Cost-revenue framework was used to explain the effects of acquisition and diversification on the incumbent firm. Real world examples pertaining to context were given.
Evaluation for requirement 2 (Product innovation) It can be challenging for Grab to maintain its differentiated services to ensure that the demand is price inelastic. Once Grab reveals a new idea or include a unique feature in its app, other firms in the digital platform industry can also include similar features. Thus, even if Grab can differentiate its services, the uniqueness of its services may only be in the short run. This implies that firms like Grab seeking to increase its profits by increasing price will have to constantly innovate and differentiate their services, either by constantly include unique features, or through extensive advertisements for imaginary differentiation. Otherwise, consumers may switch to relatively cheaper alternatives with similar features in the long run. However, constantly innovating the products and services can be expensive, therefore increasing the total costs incurred by firms like Grab. Therefore, firms like Grab should consider whether the increase in revenue through these strategies would outweigh the increase in costs required to engage in the chosen strategy. **OR** **Evaluation for requirement 2 (Acquisition and diversification)** <u>Acquisition</u> Although acquisition of Uber allows firms like Grab to reap economies of scale, if it gets too large, internal diseconomies of scale will set in, resulting in cost disadvantages. Internal diseconomies of scale are cost disadvantages	**[Scope]** Evaluation considered different perspectives like time period, impacts on various stakeholders etc…

accruing to a firm as a result of the expansion of the firm. Examples of internal diseconomies of scale that Grab might face are as follows:

i. Communication problems

Integrating Uber staff into Grab led to duplication of roles and internal conflicts. Cultural clashes between Grab's localised management style and Uber's more standardised, global approach likely caused miscommunication and inefficiencies.

ii. Coordination problems

Grab had to integrate Uber's operations, drivers, and customer base across multiple countries (Singapore, Malaysia, Vietnam, Indonesia, etc.). Managing such a wide and diverse network created bureaucratic delays, slower decision-making, and higher managerial costs. For example, setting consistent fare structures, incentives, and service standards across different regulatory environments became more complex.

The rise in cost of production will result in AC and MC to increase. As seen from Figure 7, AC & MC curves will shift upwards from AC0 & MC0 to AC1 & MC1. At the initial profit maximising output level (MR0 = MC0), price is at P0 and quantity at Q0. The firm is making supernormal profit of P0abC0. At the new profit maximising output level (MR0 = MC1), price increased from P0 to P1 and quantity decreased from Q0 to Q1. The firm will be making subnormal profits of P1C1cd instead.

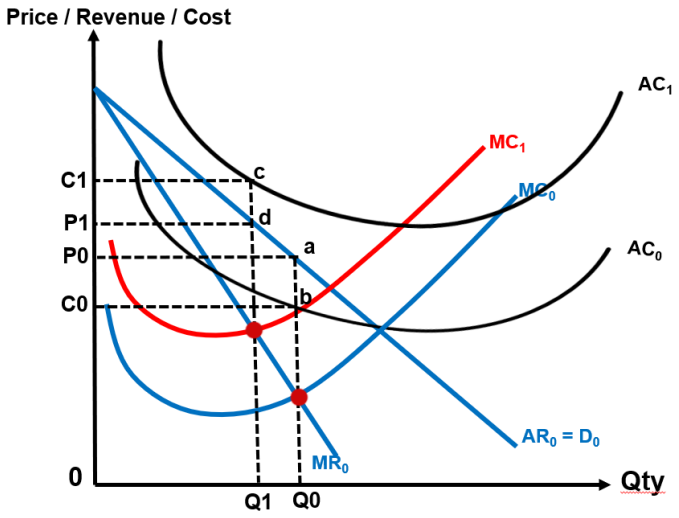


Figure 7

<u>Diversification</u>

Developing and running multiple services (GrabCar, GrabFood, GrabExpress, GrabFin) requires huge upfront investments in technology, marketing, and infrastructure.This raises fixed costs and means Grab must continuously raise capital, keeping it unprofitable for many years.

A failure in one business line (e.g. poor customer experience in GrabFood or GrabPay security breaches) can spill over and harm trust in the entire Grab brand. Not all new ventures succeed e.g. Grab's push into GrabPay and digital finance faces competition from established banks and fintechs. If customers don't adopt these services, investments may become sunk costs without returns.	
Summative Conclusion While pricing strategies may help Grab win market share in the short term, they are unlikely to reduce competition sustainably due to high costs, low customer loyalty, and regulatory risks. In contrast, non-pricing strategies are more appropriate, as they allow Grab to build a differentiated ecosystem, lock in customers, and raise barriers to entry, thereby reducing competition in the long run.	

Mark Scheme:

Knowledge, Application, Understanding and Analysis		
L3	● A **clear** and coherent answer that is **relevant** to the question requirements and applied to its context. ● Answer covers sufficient **scope** with *at least two* distinct requirements (i.e. areas of analysis): - **Requirement 1:** Explain how firm in the digital economy could use pricing strategy to reduce the competition it faces - **Requirement 2:** Explain how firm in the digital economy could use non-pricing to reduce the competition it faces ● Answer is **accurate** and has sufficient **depth**: - Detailed and accurate explanation of economic concepts with **analytical** application to the question. - Economic analysis is supported by accurately labelled and explained diagrams (cost-revenue analysis) and relevant real-world examples	8–10
L2	● Answer is **mostly relevant** to the question requirements. ● Answer **lacks scope** (e.g. considers only the first or second requirement). ● Answer may contain **minor inaccuracies** and has **insufficient depth** with **cursory** application to the question (e.g. incomplete or inaccurate explanation of economic concepts, incomplete or no explanation of diagrams and little or no use of real-world examples).	5–7
L1	● Answer is **mostly irrelevant** to question requirements. ● Economic concepts are not explained and/or **inaccurate**. ● Economic analysis **lacks coherence** and **accuracy**. ● Lacking in use of diagrams or wrong diagrams are used.	1–4
Evaluation		

E3	● Two well-explained evaluative judgements that are supported by arguments presented in the answer and linked to the context of the question PLUS a summative conclusion.	5
E2	● Two evaluative judgements, one of which is explained.	3–4
E1	● Evaluative statements that are unexplained or not supported by the arguments presented in the answer OR a judgement that is not linked to the context of the question; OR ● One explained evaluative judgement.	1–2

Q4. The global economy faced significant macroeconomic challenges in 2022–2023, including high inflation, ongoing geopolitical tensions such as the Russia-Ukraine war, and supply chain disruptions.

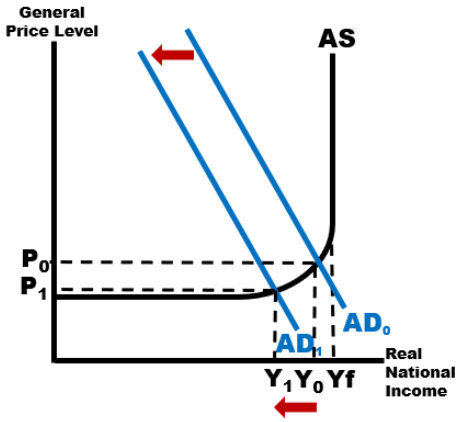
(a) Explain how the above macroeconomic challenges may affect Singapore's aggregate demand and aggregate supply. [10]

(b) Discuss the likely impact of the 'significant macroeconomic challenges' on Singapore's domestic economy and external sector. [15]

Suggested answer for part (a):

Question Analysis	
Command	Explain how (process explanation)
Content	● Aggregate demand (AD) ● Aggregate supply (AS)
Context	● 'above macroeconomic challenges' – high inflation, ongoing geopolitical tensions, supply chain disruptions ● Singapore
Synopsis: *Students are expected to interpret the 'significant macroeconomic challenges' from the preamble and link them to explain how they affect Singapore's AD and AS.*	

Introduction Aggregate demand (AD) is the total demand by households, firms, government and foreign sectors for the final goods and services that is domestically produced in the economy at various price levels. Aggregate supply (AS) is the total output that firms in the economy are willing and able to supply at different price levels in a given time period. AS consists of both short run AS (SRAS) and long run AS (LRAS). This essay will explain how the above macroeconomic challenges, such as high inflation, ongoing geopolitical tensions such as the Russia-Ukraine war, and supply chain disruptions may affect Singapore's AD and AS.	Define key terms

	Direction of essay
R1: Explain how high inflation and ongoing geopolitical tensions may affect Singapore's AD Global macroeconomic challenges such as high inflation and ongoing geopolitical tensions reduces Singapore's AD. The aftermath of the Covid-19 pandemic and ongoing geopolitical tensions such as the Russia-Ukraine war led to high global inflation in 2022-2023. Countries like US experienced high inflation of around 8%, and the countries in the Eurozone averaging around 10% inflation rate. High inflation (high cost of living) reduces the real purchasing power, reducing consumption of goods and services globally. Ongoing geopolitical tensions also led to uncertainty and pessimism as it is difficult to predict their expected profits and/or returns on investments. Investors and firms are thus more cautious with their decisions, reducing investment activities around the world. With a trade-to-GDP ratio at more than 300%, Singapore is an open economy that is highly integrated with the world through trade and investment flows. The high global inflation and uncertainty due to the ongoing geopolitical tensions would see a decline in world trade and investments, leading to a fall in export revenue and foreign direct investments (FDI) into Singapore. As exports and FDI (assuming that the FDI is invested in capital goods, I) are key components of Singapore's AD, a fall in the X and I component will lead to a significant fall in Singapore's AD, where AD = C+I+G+(X-M). As shown in Figure 1 below, AD shifts to the left from AD_0 to AD_1.  **Figure 1**	**[DEPTH]** Answer should be contextualised to the factors given in the preamble.
R2: Explain how ongoing geopolitical tensions and supply chain disruptions may affect Singapore's AS Ongoing geopolitical tensions such as the Russia-Ukraine war disrupted global energy supplies (e.g. oil & gas) and grain exports (as Ukraine is a key wheat exporter). In addition, post-Covid supply chain strains arising from backlogs at ports in the US, Europe and Asia due to earlier pandemic shutdowns led to containers shortages and higher shipping costs.	

Pandemic-driven demand for electronics due to increase in work-from-home, 5G rollout to enhance connectivity continued to strain the global semiconductor supply chains.

As a highly import-dependent economy with no natural resources, Singapore faced higher import costs, especially imported oil and natural gas. Electricity grid runs primarily on fossil fuels such as oil and natural gas. Higher oil prices raise the cost of generating electricity. This results in higher prices of electricity (fall in supply of electricity). Since electricity is used to run machines to manufacture goods, the higher electricity price raises the cost of producing goods. Oil is also used to produce petroleum products such as petrol. Thus, higher oil prices also lead to higher petrol prices. The higher petrol prices would then raise the cost of transporting goods. This leads to an overall rise in the cost of production, reducing the SRAS of the Singapore economy. As shown in Figure 2 below, the rising cost of production would lead an upward shift in the AS curve, from AS_0 to AS_1.

[DEPTH] Answer should be contextualised to the factors given in the preamble.

[DEPTH] Make a clear link to how oil/petrol/raw materials (micro) are linked to Singapore's SRAS (macro)

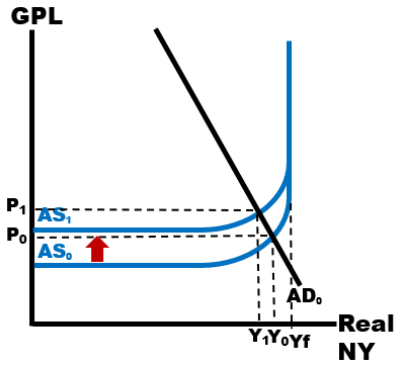


Figure 2

The decline in FDI due to the uncertainty and pessimism from the ongoing geopolitical tensions could also lead to a fall in Singapore's LRAS, assuming that investments pull out of the Singapore economy. This reduces the quantity of capital invested into Singapore, causing the LRAS to shift leftwards from AS_0 to AS_1, shown in Figure 3 below.

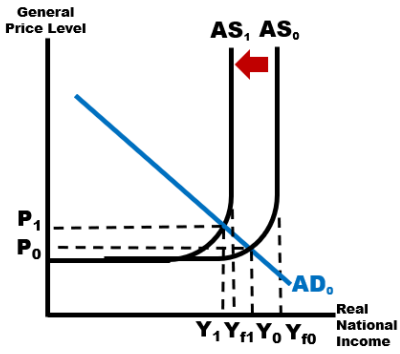


Figure 3	
Conclusion In conclusion, the above macroeconomic challenges affected Singapore adversely, causing Singapore's AD and AS to decrease.	

Mark Scheme:

Level	Descriptors	Marks
L3	● A **clear** and coherent answer that is **relevant** to the question requirements and applied to its context. ● Answer covers sufficient **scope** with *at least two* distinct points of analysis: ○ R1: Explains how the above macroeconomic challenges (e.g. high inflation and ongoing geopolitical tensions) may affect Singapore's AD ○ R2: Explains how the above macroeconomic challenges (e.g. ongoing geopolitical tensions and supply chain disruptions) may affect Singapore's AS ● Answer is **accurate** and has sufficient **depth**: ○ Detailed and accurate explanation of economic concepts with **analytical** application to the question. ○ Economic analysis is supported by accurately labelled and explained diagrams (i.e. AD-AS analysis) and relevant real-world examples.	8-10
L2	● Answer is **mostly relevant** to the question requirements. ● Answer **lacks scope** (e.g. considers only R1 or R2). ● Answer may contain **minor inaccuracies** and has **insufficient depth** with **cursory** application to the question (e.g. incomplete or inaccurate explanation of economic concepts, incomplete explanation of diagrams and little or no use of real-world examples).	5-7
L1	● Answer is **mostly irrelevant** to question requirements. ● Economic concepts are not explained and/or are **inaccurate**. ● Economic analysis **lacks coherence** and **accuracy**. Lacking in use of diagrams or wrong diagrams are used.	1-4

(b) Discuss the likely impact of the 'significant macroeconomic challenges' on Singapore's domestic economy and external sector. **[15]**

Suggested answer for part (b):

Question Analysis	
Command	Discuss
Content	● Impact on domestic economy – impact on YEP (output/income, employment, price levels)

	● Impact on external sector – impact on balance of trade, current account, capital account, balance of payments)
Context	Singapore Significant macroeconomic challenges – global high inflation, ongoing geopolitical tensions, supply chain disruptions
Synopsis: *Students are expected to explain and evaluate the impacts of the 'significant macroeconomic challenges', such as the global high inflation, ongoing geopolitical tensions and supply chain disruptions, on Singapore's domestic economy and external sector based on the macro goals of sustained economic growth, low unemployment, price stability and a healthy balance of trade and balance of payments.*	

Introduction From part (a), the 'significant macroeconomic challenges' from the preamble affected Singapore adversely, causing Singapore's AD and AS to decrease. In this essay, we will extend these impacts onto Singapore's domestic economy and external sector, concentrating the effects on macroeconomic goals such as sustained economic growth, low unemployment, price stability and a healthy balance of trade and balance of payments.	Direction of essay
R1: Explain how the significant macro challenges impact Singapore's domestic economy From part (a), the macro challenges of global high inflation and ongoing geopolitical tensions caused Singapore's AD to decrease through the fall in X and I components. In addition, the ongoing geopolitical tensions and supply chain disruptions caused SRAS and LRAS to fall. The fall in X and I trigger the reverse multiplier process as there are less injections into the economy. The initial fall in AD, will cause an unplanned rise in the firm's inventory. To maintain their inventory, firms will need to employ less resources such as labour. As less labour are hired, they receive less wages. The purchasing power of the labour force falls. This leads to a multiple fall in induced consumption. Each subsequent fall in induced consumption will be increasingly smaller. This results in a multiple leftward shift in the AD curve, where AD is falling at a decreasing rate. With AD shifting leftwards from AD_0 to AD_1 and AS shifting from AS_0 to AS_1, shown in Figure 4 below, the combined effect of the fall in AD and AS is likely to affect Singapore's domestic economy negatively.	**[DEPTH]** As part (a) only asked for the impact on Singapore's AD, it will be important to elaborate on the reverse multiplier process here in part (b) before linking to the outcome on the domestic economy.

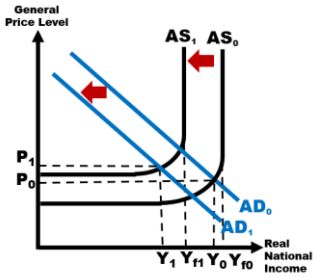


Figure 4

This multiplied fall in AD, together with the fall in AS, results in a large fall in RNY from Y_0 to Y_1, indicating a fall in actual growth. The fall in LRAS also leads to a fall in potential growth from Y_{f0} to Y_{f1}. The fall in real national output from Y_0 to Y_1 also leads to a fall in demand for labour, as labour is a derived demand, leading to an increase in demand-deficient unemployment. As Singapore is reliant on imported raw materials, the fall in AS may outweigh the fall in AD, leading to a rise in GPL from P_0 to P_1, worsening inflationary pressures.

Hence, Singapore's domestic economy will be impacted negatively, with a fall in sustained growth, a rise in demand-deficient unemployment and worsen inflationary pressures, causing Singapore to be unable to achieve her internal macro goals.

[SCOPE]

Answer should link to all 3 internal macroeconomic goals to cover the impact on Singapore's domestic economy.

[EV1] Extent of impact on Singapore's domestic economy

However, it may be the case that LRAS may not fall as much as expected, as FDI, while cautious, may be repositioning rather than exiting Singapore. In addition, Singapore also diversifies its oil and energy imports and actively working to connect its energy grid with neighboring countries to import renewable energy and enhance energy security. Singapore is pursuing both bilateral and multilateral agreements, including the Lao PDR-Thailand-Malaysia-Singapore Power Integration Project (LTMS-PIP), and is exploring connections with Indonesia, Vietnam, and Cambodia via undersea cables. Thus, SRAS may not fall that much as well.

If SRAS falls less than AD fall, then the fall in RNY may not be so large, reducing the risk of recession, and GPL may fall instead, helping to mitigate the rising cost of living.

- Extent

<u>R2: Explain how the significant macro challenges impact Singapore's external sector</u>

The fall in export revenue and investment flows will also affect Singapore's external sector adversely. The external sector of an economy refers to the part of the economy that deals with transactions between residents of a country and the rest of the world. This includes exports and imports, income flows and capital flows, which are recorded in the current account and the capital and financial accounts in the balance of payments.

[SCOPE] Focus on explaining how the macro challenges mentioned in the preamble can affect Singapore's external sector, focusing on current and capital account.

A fall in export revenue from the ongoing geopolitical tensions worsens the current account, ceteris paribus. At the same time, supply chain disruptions which causes rising cost of production causing rising GPL and inflation. From Figure 4 earlier, the combined effect can cause GPL to increase from P_0 to P_1, reducing the price competitiveness of exports as goods and services become more expensive in Singapore.

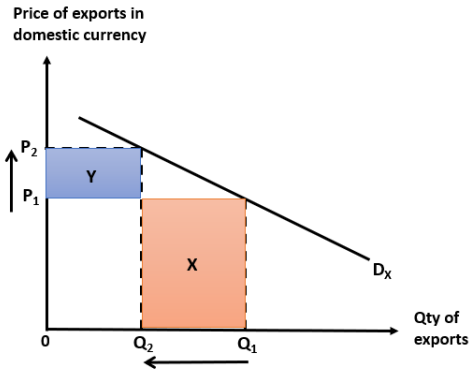


Figure 5

[DEPTH] Using economic theory, explain the effect of a change in price on export revenue, using concepts like PED to elaborate.

From Figure 5, the higher price of exports causes a more than proportionate fall in quantity demanded of exports, assuming that the demand for exports is price elastic, as there are many substitutes to Singapore-made goods. This leads to a fall in export revenue, causing the Singapore's current account and balance of payments to worsen, ceteris paribus.

At the same time, ongoing geopolitical tensions leading to the fall in FDI investment flows (and investment outflows) may also worsen the capital and financial account. FDI is a long-term investment flow by foreign firms into domestic businesses/assets. A fall in FDI inflows (e.g. fewer MNCs setting up factories or HQs in Singapore) means less capital is entering the economy. This reduces the inflows in the capital and financial account. Unless offset by other inflows (like portfolio investment, the capital and financial account will worsen, leading to a smaller surplus or even ending up with a deficit.	
[EV2] Extent of impact on Singapore's external sector However, ongoing geopolitical tensions such as the Russia-Ukraine war may not worsen Singapore's external sector to a large extent. As the tensions escalate globally, including Russia-Ukraine war and other current issues like the US-China trade disputes, Singapore, with good governance and stable economic policies, is often seen as a safe haven for investments. For example, amid worsening US-China trade relations, the trend of 'Singapore-washing' is emerging, where Chinese firms move to Singapore to distance themselves from the increasing geopolitical tensions and scrutiny they face in China, particularly in their relations with the US and the West. By establishing a presence in Singapore, companies (e.g Shein, Nio, ByteDance, etc) can appear more "international", making it easier to attract foreign investment, expand into Western markets, and navigate complex international trade environments. This may instead lead to Singapore receiving large FDI inflows, helping to improve the capital and financial account instead. Furthermore, although the supply-chain disruptions could worsen Singapore's current account through higher prices, Singapore continues to produce intermediate and final goods of high quality, with key exports including electronics, machinery and equipment, pharmaceuticals. Hence, current account may also not worsen as Singapore has strong non-price competitiveness for her exports.	• Counter
<u>Synthesis / Evaluative Judgement</u> In conclusion, the significant global macroeconomic challenges are likely to affect Singapore negatively in the **short run.** **[Time period]** This is because in the short run, high global inflation and ongoing geopolitical tensions are likely to create much uncertainty and pessimism which causes investors and firms to react negatively first as they become more cautious. However, in the long run, Singapore is likely to be able to come out of these challenges if she is able to position herself as an investment destination that investors can be confident in. Nonetheless, Singapore must maintain its high standards of regulations in order to effectively manage the increased volume and complexity of these capital inflows so that Singapore can truly benefit in the long run.	Answer the question "likely impact" – likely positive or negative impact overall Reason using CRATES criteria: time period

Mark Scheme:

Level	Descriptors	Marks
L3	● A **clear** and coherent answer that is **relevant** to the question requirements and applied to its context. ● Answer covers sufficient **scope** with ***at least two*** distinct points of analysis in the electric vehicle market: ○ R1: Explain how the significant macro challenges impact Singapore's domestic economy ○ R2: Explain how the significant macro challenges impact Singapore's external sector ● Answer is **accurate** and has sufficient **depth**: ○ Detailed and accurate explanation of economic concepts with **analytical** application to the question. ○ Economic analysis is supported by accurately labelled and explained diagrams (i.e. AD-AS analysis) and relevant real-world examples.	8-10
L2	● Answer is **mostly relevant** to the question requirements. ● Answer **lacks scope** (e.g. considers only R1 or R2). ● Answer may contain **minor inaccuracies** and has **insufficient depth** with **cursory** application to the question (e.g. incomplete or inaccurate explanation of economic concepts, incomplete or no explanation of diagrams and little or no use of real-world examples).	5-7
L1	● Answer is **mostly irrelevant** to question requirements. ● Economic concepts are not explained and/or **inaccurate**. ● Economic analysis **lacks coherence** and **accuracy**. ● Lacking in use of diagrams or wrong diagrams are used.	1-4

Evaluation		
E3	● Two well-explained evaluative judgements that are supported by arguments presented in the answer and linked to the context of the question PLUS a summative conclusion.	5
E2	Two evaluative judgements, one of which is explained.	3–4
E1	● Evaluative statements that are unexplained or not supported by the arguments presented in the answer OR a judgement that is not linked to the context of the question; OR ● One explained evaluative judgement.	1–2

Q4. The global economy faced significant macroeconomic challenges in 2022–2023, including high inflation, ongoing geopolitical tensions such as the Russia-Ukraine war, and supply chain disruptions.

(c) Explain how the above macroeconomic challenges may affect Singapore's aggregate demand and aggregate supply. **[10]**

(d) Discuss the likely impact of the 'significant macroeconomic challenges' on Singapore's domestic economy and external sector. **[15]**

Suggested answer for part (a):

Question Analysis	
Command	Explain how (process explanation)
Content	● Aggregate demand (AD) ● Aggregate supply (AS)
Context	● 'above macroeconomic challenges' – high inflation, ongoing geopolitical tensions, supply chain disruptions ● Singapore
Synopsis: *Students are expected to interpret the 'significant macroeconomic challenges' from the preamble and link them to explain how they affect Singapore's AD and AS.*	

Introduction ggregate demand (AD) is the total demand by households, firms, government and foreign sectors for the final goods and services that is domestically produced in the economy at various price levels. Aggregate supply (AS) is the total output that firms in the economy are willing and able to supply at different price levels in a given time period. AS consists of both short run AS (SRAS) and long run AS (LRAS). This essay will explain how the above macroeconomic challenges, such as high inflation, ongoing geopolitical tensions such as the Russia-Ukraine war, and supply chain disruptions may affect Singapore's AD and AS.	Define key terms Direction of essay
R1: Explain how high inflation and ongoing geopolitical tensions may affect Singapore's AD Global macroeconomic challenges such as high inflation and ongoing geopolitical tensions reduces Singapore's AD. The aftermath of the Covid-19 pandemic and ongoing geopolitical tensions such as the Russia-Ukraine war led to high global inflation in 2022-2023. Countries like US experienced high inflation of around 8%, and the countries in the Eurozone averaging around 10% inflation rate. High inflation (high cost of living) reduces the real purchasing power, reducing consumption of goods and services globally. Ongoing geopolitical tensions also led to uncertainty and pessimism as it is difficult to predict their expected profits and/or returns on investments. Investors and firms are thus more cautious with their decisions, reducing investment activities around the world. With a trade-to-GDP ratio at more than 300%, Singapore is an open economy that is highly integrated with the world through trade and investment flows. The high global inflation and uncertainty due to the ongoing geopolitical tensions would see a decline in world trade and investments, leading to a fall in export revenue and foreign direct investments (FDI) into	**[DEPTH]** Answer should be contextualised to the factors given in the preamble.

Singapore. As exports and FDI (assuming that the FDI is invested in capital goods, I) are key components of Singapore's AD, a fall in the X and I component will lead to a significant fall in Singapore's AD, where AD = C+I+G+(X-M). As shown in Figure 1 below, AD shifts to the left from AD_0 to AD_1.

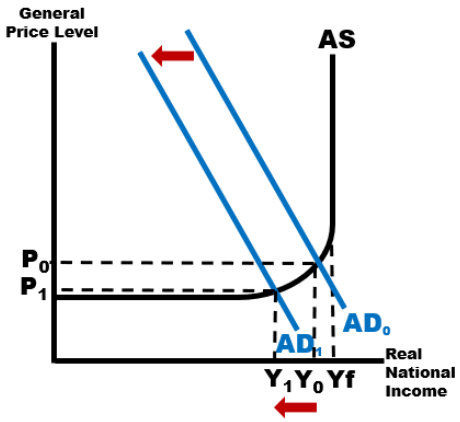


Figure 1

R2: Explain how ongoing geopolitical tensions and supply chain disruptions may affect Singapore's AS

Ongoing geopolitical tensions such as the Russia-Ukraine war disrupted global energy supplies (e.g. oil & gas) and grain exports (as Ukraine is a key wheat exporter). In addition, post-Covid supply chain strains arising from backlogs at ports in the US, Europe and Asia due to earlier pandemic shutdowns led to containers shortages and higher shipping costs. Pandemic-driven demand for electronics due to increase in work-from-home, 5G rollout to enhance connectivity continued to strain the global semiconductor supply chains.

As a highly import-dependent economy with no natural resources, Singapore faced higher import costs, especially imported oil and natural gas. Electricity grid runs primarily on fossil fuels such as oil and natural gas. Higher oil prices raise the cost of generating electricity. This results in higher prices of electricity (fall in supply of electricity). Since electricity is used to run machines to manufacture goods, the higher electricity price raises the cost of producing goods. Oil is also used to produce petroleum products such as petrol. Thus, higher oil prices also lead to higher petrol prices. The higher petrol prices would then raise the cost of transporting goods. This leads to an overall rise in the cost of production, reducing the SRAS of the Singapore economy. As shown in Figure 2 below, the rising cost of production would lead an upward shift in the AS curve, from AS_0 to AS_1.

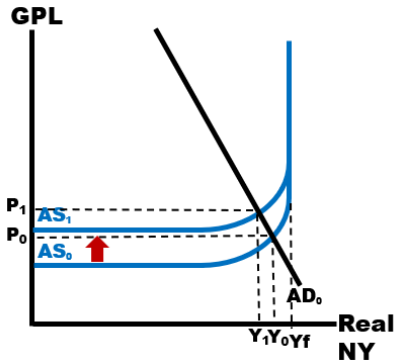
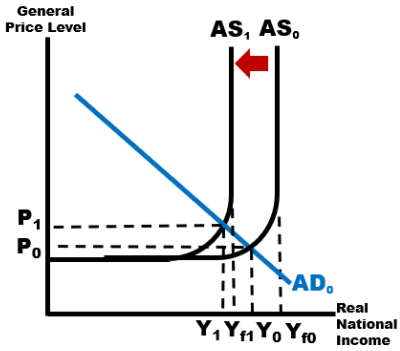


Figure 2

[DEPTH] Answer should be contextualised to the factors given in the preamble.

[DEPTH] Make a clear link to how oil/petrol/raw materials (micro) are linked to Singapore's SRAS (macro)

The decline in FDI due to the uncertainty and pessimism from the ongoing geopolitical tensions could also lead to a fall in Singapore's LRAS, assuming that investments pull out of the Singapore economy. This reduces the quantity of capital invested into Singapore, causing the LRAS to shift leftwards from AS_0 to AS_1, shown in Figure 3 below.  **Figure 3**	
<u>Conclusion</u> In conclusion, the above macroeconomic challenges affected Singapore adversely, causing Singapore's AD and AS to decrease.	

Mark Scheme:

Level	Descriptors	Marks
L3	● A **clear** and coherent answer that is **relevant** to the question requirements and applied to its context. ● Answer covers sufficient **scope** with *<u>at least two</u>* distinct points of analysis: ○ R1: Explains how the above macroeconomic challenges (e.g. high inflation and ongoing geopolitical tensions) may affect Singapore's AD ○ R2: Explains how the above macroeconomic challenges (e.g. ongoing geopolitical tensions and supply chain disruptions) may affect Singapore's AS ● Answer is **accurate** and has sufficient **depth**: ○ Detailed and accurate explanation of economic concepts with **analytical** application to the question. ○ Economic analysis is supported by accurately labelled and explained diagrams (i.e. AD-AS analysis) and relevant real-world examples.	8-10
L2	● Answer is **mostly relevant** to the question requirements. ● Answer **lacks scope** (e.g. considers only R1 or R2). ● Answer may contain **minor inaccuracies** and has **insufficient depth** with **cursory** application to the question (e.g. incomplete or inaccurate explanation of economic concepts, incomplete explanation of diagrams and little or no use of real-world examples).	5-7
L1	● Answer is **mostly irrelevant** to question requirements. ● Economic concepts are not explained and/or are **inaccurate**. ● Economic analysis **lacks coherence** and **accuracy**. Lacking in use of diagrams or wrong diagrams are used.	1-4

(c) Discuss the likely impact of the 'significant macroeconomic challenges' on Singapore's domestic economy and external sector. [15]

Suggested answer for part (b):

Question Analysis	
Command	Discuss
Content	• Impact on domestic economy – impact on YEP (output/income, employment, price levels) • Impact on external sector – impact on balance of trade, current account, capital account, balance of payments)
Context	Singapore Significant macroeconomic challenges – global high inflation, ongoing geopolitical tensions, supply chain disruptions
Synopsis: *Students are expected to explain and evaluate the impacts of the 'significant macroeconomic challenges', such as the global high inflation, ongoing geopolitical tensions and supply chain disruptions, on Singapore's domestic economy and external sector based on the macro goals of sustained economic growth, low unemployment, price stability and a healthy balance of trade and balance of payments.*	

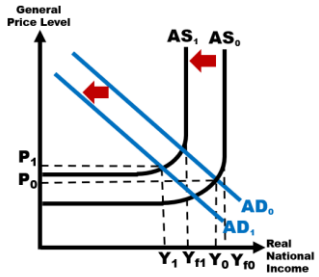
Introduction From part (a), the 'significant macroeconomic challenges' from the preamble affected Singapore adversely, causing Singapore's AD and AS to decrease. In this essay, we will extend these impacts onto Singapore's domestic economy and external sector, concentrating the effects on macroeconomic goals such as sustained economic growth, low unemployment, price stability and a healthy balance of trade and balance of payments.	Direction of essay
R1: Explain how the significant macro challenges impact Singapore's domestic economy From part (a), the macro challenges of global high inflation and ongoing geopolitical tensions caused Singapore's AD to decrease through the fall in X and I components. In addition, the ongoing geopolitical tensions and supply chain disruptions caused SRAS and LRAS to fall. The fall in X and I trigger the reverse multiplier process as there are less injections into the economy. The initial fall in AD, will cause an unplanned rise in the firm's inventory. To maintain their inventory, firms will need to employ less resources such as labour. As less labour are hired, they receive less wages. The purchasing power of the labour force falls. This leads to a multiple fall in induced consumption. Each subsequent fall in induced consumption will be increasingly smaller. This results in a multiple leftward shift in the AD curve, where AD is falling at a decreasing rate. With AD shifting leftwards from AD_0 to AD_1 and AS shifting from AS_0 to AS_1, shown in Figure 4 below, the combined effect of the fall in AD and AS is likely to affect Singapore's domestic economy negatively.  	**[DEPTH]** As part (a) only asked for the impact on Singapore's AD, it will be important to elaborate on the reverse multiplier process here in part (b) before linking to the outcome on the domestic economy.

Figure 4

This multiplied fall in AD, together with the fall in AS, results in a large fall in RNY from Y_0 to Y_1, indicating a fall in actual growth. The fall in LRAS also leads to a fall in potential growth from Y_{f0} to Y_{f1}. The fall in real national output from Y_0 to Y_1 also leads to a fall in demand for labour, as labour is a derived demand, leading to an increase in demand-deficient unemployment. As Singapore is reliant on imported raw materials, the fall in AS may outweigh the fall in AD, leading to a rise in GPL from P_0 to P_1, worsening inflationary pressures.

Hence, Singapore's domestic economy will be impacted negatively, with a fall in sustained growth, a rise in demand-deficient unemployment and worsen inflationary pressures, causing Singapore to be unable to achieve her internal macro goals.

[SCOPE]

Answer should link to all 3 internal macroeconomic goals to cover the impact on Singapore's domestic economy.

[EV1] Extent of impact on Singapore's domestic economy

However, it may be the case that LRAS may not fall as much as expected, as FDI, while cautious, may be repositioning rather than exiting Singapore. In addition, Singapore also diversifies its oil and energy imports and actively working to connect its energy grid with neighboring countries to import renewable energy and enhance energy security. Singapore is pursuing both bilateral and multilateral agreements, including the Lao PDR-Thailand-Malaysia-Singapore Power Integration Project (LTMS-PIP), and is exploring connections with Indonesia, Vietnam, and Cambodia via undersea cables. Thus, SRAS may not fall that much as well.

If SRAS falls less than AD fall, then the fall in RNY may not be so large, reducing the risk of recession, and GPL may fall instead, helping to mitigate the rising cost of living.

- Extent

<u>R2: Explain how the significant macro challenges impact Singapore's external sector</u>

The fall in export revenue and investment flows will also affect Singapore's external sector adversely. The external sector of an economy refers to the part of the economy that deals with transactions between residents of a country and the rest of the world. This includes exports and imports, income flows and capital flows, which are recorded in the current account and the capital and financial accounts in the balance of payments.

A fall in export revenue from the ongoing geopolitical tensions worsens the current account, ceteris paribus. At the same time, supply chain disruptions which causes rising cost of production causing rising GPL and inflation. From Figure 4 earlier, the combined effect can cause GPL to increase from P_0 to P_1, reducing the price competitiveness of exports as goods and services become more expensive in Singapore.

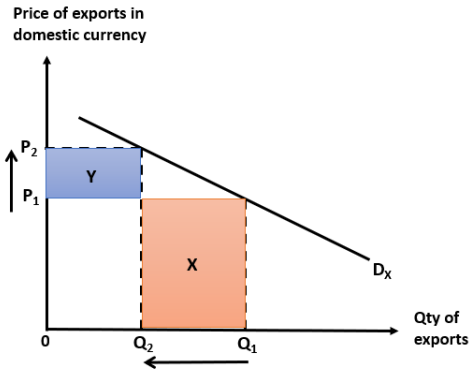


Figure 5

[SCOPE] Focus on explaining how the macro challenges mentioned in the preamble can affect Singapore's external sector, focusing on current and capital account.

From Figure 5, the higher price of exports causes a more than proportionate fall in quantity demanded of exports, assuming that the demand for exports is price elastic, as there are many substitutes to Singapore-made goods. This leads to a fall in export revenue, causing the Singapore's current account and balance of payments to worsen, ceteris paribus. At the same time, ongoing geopolitical tensions leading to the fall in FDI investment flows (and investment outflows) may also worsen the capital and financial account. FDI is a long-term investment flow by foreign firms into domestic businesses/assets. A fall in FDI inflows (e.g. fewer MNCs setting up factories or HQs in Singapore) means less capital is entering the economy. This reduces the inflows in the capital and financial account. Unless offset by other inflows (like portfolio investment, the capital and financial account will worsen, leading to a smaller surplus or even ending up with a deficit.	**[DEPTH]** Using economic theory, explain the effect of a change in price on export revenue, using concepts like PED to elaborate.
[EV2] Extent of impact on Singapore's external sector However, ongoing geopolitical tensions such as the Russia-Ukraine war may not worsen Singapore's external sector to a large extent. As the tensions escalate globally, including Russia-Ukraine war and other current issues like the US-China trade disputes, Singapore, with good governance and stable economic policies, is often seen as a safe haven for investments. For example, amid worsening US-China trade relations, the trend of 'Singapore-washing' is emerging, where Chinese firms move to Singapore to distance themselves from the increasing geopolitical tensions and scrutiny they face in China, particularly in their relations with the US and the West. By establishing a presence in Singapore, companies (e.g Shein, Nio, ByteDance, etc) can appear more "international", making it easier to attract foreign investment, expand into Western markets, and navigate complex international trade environments. This may instead lead to Singapore receiving large FDI inflows, helping to improve the capital and financial account instead. Furthermore, although the supply-chain disruptions could worsen Singapore's current account through higher prices, Singapore continues to produce intermediate and final goods of high quality, with key exports including electronics, machinery and equipment, pharmaceuticals. Hence, current account may also not worsen as Singapore has strong non-price competitiveness for her exports.	● Counter
<u>Synthesis / Evaluative Judgement</u> In conclusion, the significant global macroeconomic challenges are likely to affect Singapore negatively in the **short run.** **[Time period]** This is because in the short run, high global inflation and ongoing geopolitical tensions are likely to create much uncertainty and pessimism which causes investors and firms to react negatively first as they become more cautious. However, in the long run, Singapore is likely to be able to come out of these challenges if she is able to position herself as an investment destination that investors can be confident in. Nonetheless, Singapore must maintain its high standards of regulations in order to effectively manage the increased volume and complexity of these capital inflows so that Singapore can truly benefit in the long run.	Answer the question "likely impact" – likely positive or negative impact overall Reason using CRATES criteria: time period

Mark Scheme:

Level	Descriptors	Marks
L3	● A **clear** and coherent answer that is **relevant** to the question requirements and applied to its context. ● Answer covers sufficient **scope** with *<u>at least two</u>* distinct points of analysis in the electric vehicle market: ○ R1: Explain how the significant macro challenges impact Singapore's domestic economy	8-10

	○ R2: Explain how the significant macro challenges impact Singapore's external sector ● Answer is **accurate** and has sufficient **depth**: ○ Detailed and accurate explanation of economic concepts with **analytical** application to the question. ○ Economic analysis is supported by accurately labelled and explained diagrams (i.e. AD-AS analysis) and relevant real-world examples.	
L2	● Answer is **mostly relevant** to the question requirements. ● Answer **lacks scope** (e.g. considers only R1 or R2). ● Answer may contain **minor inaccuracies** and has **insufficient depth** with **cursory** application to the question (e.g. incomplete or inaccurate explanation of economic concepts, incomplete or no explanation of diagrams and little or no use of real-world examples).	5-7
L1	● Answer is **mostly irrelevant** to question requirements. ● Economic concepts are not explained and/or **inaccurate**. ● Economic analysis **lacks coherence** and **accuracy**. ● Lacking in use of diagrams or wrong diagrams are used.	1-4

Evaluation		
E3	● Two well-explained evaluative judgements that are supported by arguments presented in the answer and linked to the context of the question PLUS a summative conclusion.	5
E2	Two evaluative judgements, one of which is explained.	3–4
E1	● Evaluative statements that are unexplained or not supported by the arguments presented in the answer OR a judgement that is not linked to the context of the question; OR ● One explained evaluative judgement.	1–2

Q5: "Philippines faces a staggering budget deficit of 1.37 trillion pesos in 2020 and 566.2 billion pesos as of the first five months of 2021, and 4.1-per cent inflation last June. Add to this list the 4.14 million Filipinos or 8.7 per cent of the labour force out of jobs as of April, and the 21 per cent of the population living in poverty."

Source: The Straits Times, Jul 26, 2021.

(a) Explain a possible demand side reason and a possible supply side reason for the rise in the rate of inflation in Philippines. [10]

Suggested answer for part (a):

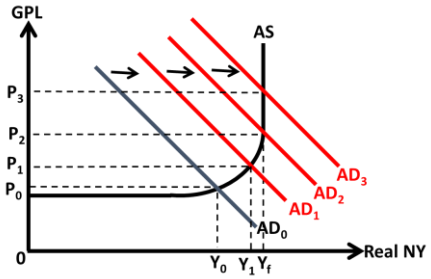
Question Analysis	
Command	Explain (Give reason for)
Content	● Demand-pull inflation ● Cost-push inflation
Context	● 'possible reason' – reason need not be mentioned in preamble ● Philippines
Synopsis: *Students are expected to explain one demand-pull reason and one cost push reason for inflation in Philippines*	

Introduction From the preamble, Philippines is facing several economic problems, one of which is that of high inflation rate of 4.1% last June. The high inflation in Philippines could have been due to a rise in aggregate demand (AD) (i.e. demand-pull inflation) or a fall in aggregate supply (AS) (i.e. cost-push inflation).	Direction of essay
R1: Explain one possible reason for demand-pull inflation in Philippines Demand pull inflation occurs when general price levels rise due to persistent increase in aggregate demand (AD) in the economy that are not matched by the output of goods and services (AS). (i.e. rising AD that is not matched by AS). One possible cause of demand-pull inflation in the Philippines in 2021 was the improvement in global economic sentiments. As the world economy gradually recovered from the COVID-19-induced recession, optimism about future growth spread across countries. For the Philippines, this meant a rise in both investment expenditure and export revenue. Improved global business confidence raised investor expectations of stronger profit margins. Firms, anticipating an expanding Philippine economy, became more willing to undertake new investment projects, including those previously deemed unprofitable. This resulted in higher investment in capital goods, both from domestic businesses and foreign investors seeking to benefit from the recovery. At the same time, the rebound in global demand supported the Philippines' export sector. Major trading partners such as the United States, China, and other Asian economies increased their imports as consumer confidence rose, and precautionary savings fell. Philippine exports—particularly electronics, semiconductors, and manufactured goods—saw stronger demand, leading to higher export revenue for the country.	**[DEPTH]** Answer should be contextualized to Philippines

Initially, the Philippine economy was in equilibrium at a general price level (GPL) of P1 and national output of Y1. The combined effects of higher investment expenditure and export earnings shifted aggregate demand (AD) from AD1 to AD2. Firms, motivated by higher profits, responded by raising production. However, as output approached the economy's productive capacity or full employment level of output (Yf), production became less efficient. Firms increasingly relied on less suitable resources, and the unit costs of production rose. Consequently, additional output could only be sustained if prices were higher, leading to an increase in the GPL alongside the rise in output.

The initial rise in AD, will cause an unplanned fall in the firm's inventory. To maintain their inventory, firms will need to employ more resources such as labour. As more labour are hired, they receive more in wages. The purchasing power of the labour force rises. This leads to a multiple rise in induced consumption. Each subsequent rise in induced consumption will be increasingly smaller. This results in a multiple rightward shift in the AD curve, where AD is rising at a decreasing rate.

When aggregate demand rose further (e.g., from AD2 to AD3), resource scarcity in the Philippines intensified, pushing the GPL upward with only limited increases in output. Once the full employment level of output (Yf) was reached, continued increases in AD (e.g., AD3 to AD4) contributed solely to higher inflation without meaningful gains in output. This dynamic partly explains the upward inflationary pressures experienced by the Philippines in 2021, as global recovery fueled demand-pull inflation domestically.

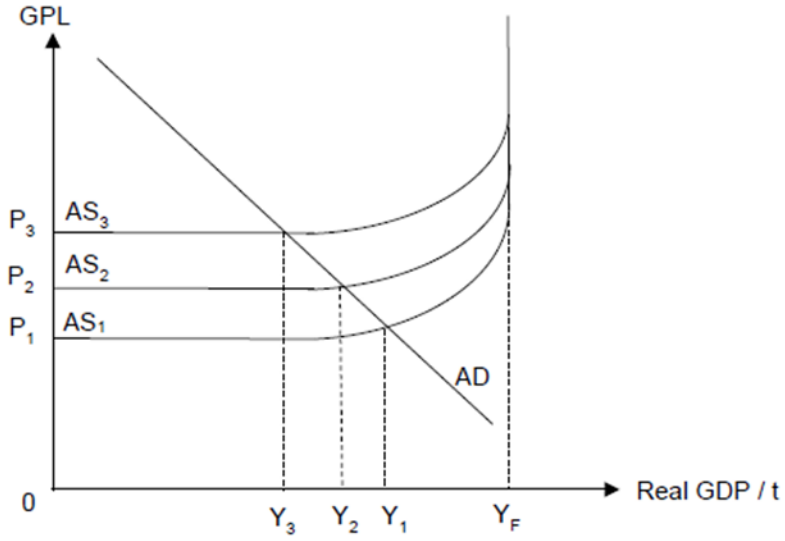


Hence, demand-pull inflation can be caused by the economy having an optimistic global economic outlook.

R2: Explain one possible reason for cost-push inflation in Philippines

Cost-push inflation occurs when general price levels rise due to rising costs of production (e.g. increase in wages, rents, interest, etc.). Hence cost-push inflation is a supply-side phenomenon. Cost-push inflation in the Philippines in 2021 arose partly from the increase in the price of imported inputs.

Like many non-oil producing countries, the Philippines depends heavily on imported crude oil and petroleum products. In 2021, global crude oil prices rebounded strongly as demand recovered from the pandemic slump, rising from below USD 40 per barrel in 2020 to above USD 70 per barrel by mid-2021. This surge in global oil prices drove up domestic energy costs, and since energy is a necessary input in virtually all production processes, it raised the unit cost of production across many sectors in the Philippines. These cost pressures translated into higher prices of goods and services, reflected in increases in the general price level (GPL), as the aggregate supply (AS) curve shifted upwards.

The Philippine economy was initially in equilibrium at a GPL of P1 and national output of Y1. With the rise in unit production costs, independent of the level of aggregate demand, profit-motivated firms were only willing to continue producing at the same level if they could charge higher prices. This resulted in a leftward/upward shift of the AS curve, from AS1 to AS2. The new equilibrium was established at a higher GPL of P2 and a lower national output of Y2, as consumers and firms faced higher costs. As global oil prices and other imported input costs (such as food commodities like wheat and soybeans) continued to rise through 2021, the Philippines experienced persistent cost-push inflationary pressure. Further upward shifts of the AS curve (e.g., to AS3) led to successive increases in the GPL, while output was constrained, slowing the pace of economic recovery. This explains part of why Philippine inflation averaged above the Bangko Sentral ng Pilipinas' target range in 2021, despite the economy not yet fully returning to pre-pandemic output levels.  Hence, a rise in the price of imported inputs can cause cost-push inflation.	**[DEPTH]** Answer should be contextualized to Philippines
<u>Conclusion</u> In conclusion, the inflationary pressures experienced by the Philippines in 2021 were driven by a combination of demand-pull and cost-push factors. On the one hand, improved global economic sentiments from the post-pandemic recovery boosted investment expenditure and export revenues, shifting aggregate demand upward and raising both output and prices. On the other hand, rising global prices of imported inputs such as crude oil and food commodities increased production costs for firms, shifting aggregate supply upward and exerting additional upward pressure on the general price level even as output was constrained. Together, these forces explain why the Philippines faced above-target inflation in 2021, as both stronger demand and higher costs contributed to persistent upward movements in the general price level.	

Mark Scheme:

Level	Descriptors	Marks

L3	• A **clear** and coherent answer that is **relevant** to the question requirements and applied to its context.
	• Answer covers sufficient **scope** with *<u>at least two</u>* distinct points of analysis:
	  ○ R1: Explains one possible reason for demand-pull inflation in Philippines
	  ○ R2: Explains one possible reason for cost-push inflation in Philippines
		8-10

	• Answer is **accurate** and has sufficient **depth**:
	  ○ Detailed and accurate explanation of economic concepts with **analytical** application to the question.
	  ○ Economic analysis is supported by accurately labelled and explained diagrams (i.e. AD-AS analysis) and relevant real-world examples.	

L2	• Answer is **mostly relevant** to the question requirements. • Answer **lacks scope** (e.g. considers only R1 or R2). • Answer may contain **minor inaccuracies** and has **insufficient depth** with **cursory** application to the question (e.g. incomplete or inaccurate explanation of economic concepts, incomplete explanation of diagrams and little or no use of real-world examples).	5-7
L1	• Answer is **mostly irrelevant** to question requirements. • Economic concepts are not explained and/or are **inaccurate**. • Economic analysis **lacks coherence** and **accuracy**. Lacking in use of diagrams or wrong diagrams are used.	1-4

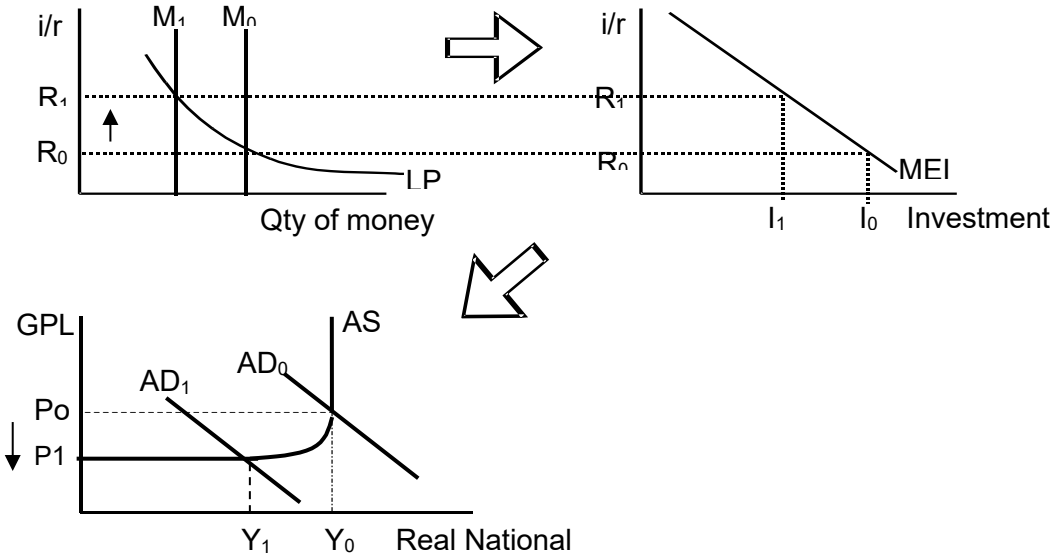
(b) Discuss the factors that determine the choice of policies that the Philippines' government would use to reduce inflation.[15]

Suggested answer for part (b):

Question Analysis	
Command	Discuss
Content	• Benefits, costs and constraints that determine the choices of policies to reduce inflation
Context	Philippines
Synopsis: *Students should focus on discussing the benefits, costs and constraints in determining the choices of policies to reduce inflation in Philippines.*	

Introduction Due to the negative economic and social consequences of high inflation—such as the erosion of purchasing power, higher uncertainty for investors, and risks of slower growth—the Philippine government must carefully choose policies to reduce inflation. However, every policy has limitations and trade-offs. With a budget deficit of ₱1.37 trillion in 2020 and ₱566.2 billion in the first five months of 2021, as well as an inflation rate of 4.1% in June 2021 (above the BSP's 2–4% target), policy choices are constrained. Moreover, with 4.14 million Filipinos unemployed (8.7% of the labour force in April 2021) and 21% of the population living in poverty, inflation control must be balanced with employment and equity concerns.	Direction of essay
R1: The government needs to consider the key benefit of its policy choice, i.e., how the policy choice can effectively address the root cause of the inflation. The government needs to consider the key benefit of its policy choice, i.e., how the policy can effectively address the root cause of inflation. The government can use monetary and/or fiscal policies to reduce demand-pull inflation. For example, in the Philippines, strong household consumption (around 70% of GDP) and rising remittances can boost domestic demand, potentially causing inflation.	**[DEPTH]** As part (a) only discusses the causes of inflation, part (b) should consider the benefits of the policies through the solving of inflation.

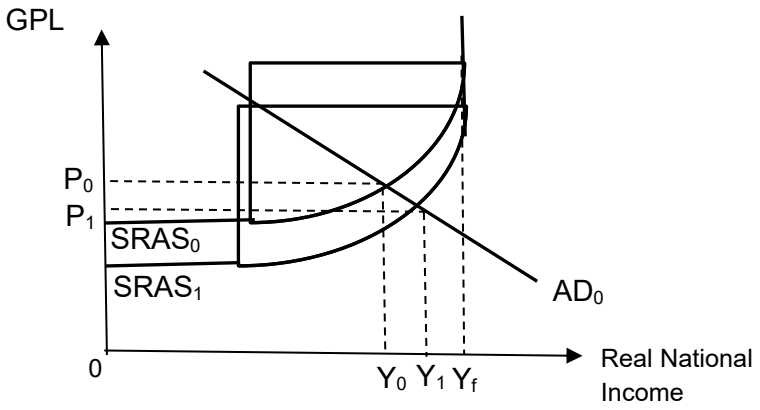
To manage this, the Bangko Sentral ng Pilipinas (BSP) can increase the money supply in an economy by raising the cash ratio and selling government bonds. This fall in money supply from M0 to M1 raises the interest rates from R0 to R1 as seen in the figure below. With higher interest rates, cost of borrowing rises and this reduces expected profitability on investment, resulting in a fall in investment expenditure (I) from I0 to I1.
Furthermore, higher interest rates discourage consumption (C) as cost of borrowing to purchase on credit is higher and savings becomes more attractive. The fall in 'I' and 'C' will cause a fall in AD from AD0 to AD1. The fall in AD from ADo to AD1, creates a surplus of goods and services at the price Po. The surplus exerts downward pressure on prices. Eventually, price falls from Po to P1 and real GDP falls from Yo to Y1.



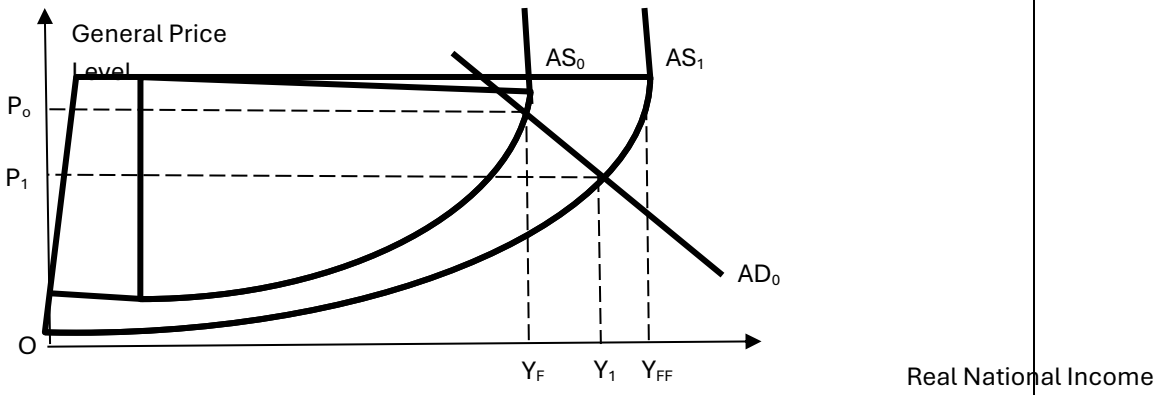
This policy works because controlling the sources of excessive demand reduces the likelihood of prices rising beyond sustainable levels.

However, the government should use supply-side policies (SSP) to address cost-push inflation. Cost-push inflation is caused by rising production costs, such as increases in global oil and food prices, which are imported by the Philippines. For instance, in 2021, surges in global crude oil and rice prices increased transport and food costs, pushing up overall prices. The Philippine government can implement targeted supply-side measures, such as fuel subsidies for jeepney drivers (Pantawid Pasada Program) or temporary tariff reductions on essential food imports, to reduce the impact of higher costs on consumers and firms. These measures result in a reduction in cost of production, incentivising firms to supply more goods, increasing the SRAS. The SRAS curve shifts downwards from SRAS0 to SRAS1 (Figure 16) and real national income rises from Y0 to Y1, resulting in an decrease in GPL from P0 to P1.

[SCOPE]
Answer should address both demand pull and cost push inflation



Over time, long-term structural reforms—such as improving agricultural productivity or investing in renewable energy—can reduce the economy's vulnerability to imported cost shocks, ensuring more stable prices in the future. Long Run supply-side policies involve active government intervention to increase the quantity and quality of the factors of production (land, labour, capital, entrepreneurship), or by encouraging the development of technology in order to increase the potential output or the productive capacity of the economy.



With reference to the above figure, an increase in the productive capacity from YF to YFF will cause AS curve to shift rightwards from AS0 to AS1 resulting in a decrease in GPL from P0 to P1.

[EV1]: While monetary and fiscal policies can effectively curb demand-pull inflation and supply-side measures can mitigate cost-push pressures, each approach has limitations. Over-reliance on monetary tightening may slow economic recovery and increase unemployment, particularly when inflation is driven by external cost shocks rather than domestic demand. Likewise, targeted subsidies and tariff adjustments can temporarily ease cost-push inflation, but they are costly and cannot fully shield the economy from global price fluctuations. Therefore, the Philippines requires a balanced strategy that combines short-term monetary and supply-side measures with long-term structural reforms to reduce import dependence and enhance resilience to external shocks, ensuring more sustainable price stability.

Recall the guidance for in-body EV:
- Counter
- Extent
- Limitation

R2: The government also needs to consider the <u>costs</u> arising from their policy choice and the <u>constraints</u> that each face in carrying out the policies.

The Philippine government also needs to consider the costs and constraints associated with its policy choices in controlling inflation. In 2021, the country faced a staggering budget deficit of ₱1.37 trillion in 2020 and ₱566.2 billion in the first five months of 2021, alongside 4.1% inflation in June. Adding to these fiscal and price pressures, 4.14 million Filipinos

[SCOPE] Focus on explaining the costs and constraints of the choice of policies.

(8.7% of the labor force) were unemployed in April, and 21% of the population lived in poverty, meaning that inflation policies must be carefully designed to avoid worsening social and economic hardship.

Constraint considerations – factors that could limit the government's ability to implement inflation policies effectively:

Nature of the economy

The Philippines is a small and open economy heavily reliant on imports, particularly oil and food. Because imported goods are essential for consumption and production, domestic demand-management policies alone may be insufficient to control inflation. Measures to stabilize the peso and reduce import costs, such as targeted subsidies or temporary tariff adjustments, are also necessary. In contrast, larger economies with more significant domestic markets, such as the US, can rely more on domestic fiscal or monetary policies to influence inflation.

[DEPTH] Elaborate in context of the question.

Size of the multiplier

The Philippines has a relatively small fiscal multiplier due to high marginal propensity to save, high import content in consumption, and leakages in the economy. This means that increases in government spending or tax cuts may have limited effects in reducing demand-pull inflation. Therefore, demand-management policies often need to be complemented with targeted supply-side measures, such as subsidies for essential goods, to meaningfully affect price levels.

Government budget constraint

The large budget deficit in 2020 and ongoing fiscal gaps in 2021 limit the government's ability to implement broad fiscal interventions or large-scale subsidies to curb inflation.

Targeted supply-side measures—such as fuel subsidies for jeepney drivers (Pantawid Pasada Program) or temporary tariff reductions on rice and other essentials—can reduce cost-push inflation, but they are expensive and must remain temporary to be sustainable.

Monetary policy, via BSP interest rate adjustments, is a more flexible tool for managing demand-pull inflation, though excessive tightening risks slowing post-pandemic recovery and worsening unemployment.

Cost considerations – potential negative effects of inflation policies:

Opportunity costs and trade-offs

Tightening monetary policy to curb demand-pull inflation may slow economic growth and increase unemployment, especially when inflation is largely driven by imported cost shocks.

Maintaining a stronger peso helps contain imported inflation but may reduce export competitiveness and slow growth in export-oriented sectors.

External constraints

Policies affecting trade, tariffs, or currency stability could provoke retaliation from trading partners. For example, adjusting tariffs to protect domestic consumers could be viewed as protectionist, potentially leading to trade barriers that hurt exports.

Overall, managing inflation in the Philippines requires carefully balancing short-term stabilization measures with long-term structural reforms. Monetary policy targeted supply-

side interventions, and measures to reduce import dependence must be coordinated to ensure price stability without exacerbating poverty, unemployment, or fiscal pressures.	
[EV2]: The costs and constraints of inflation management in the Philippines expose significant weaknesses in the government's policy options. With limited fiscal space from persistent budget deficits and a weak fiscal multiplier, expansionary spending or broad subsidies are unlikely to deliver meaningful relief and risk worsening public debt. Monetary tightening, while available, is blunt and risks deepening unemployment when inflation is largely driven by external supply shocks beyond domestic control. Reliance on targeted subsidies and tariff cuts provides only short-term relief but creates fiscal burdens and dependency without addressing structural vulnerabilities, such as import reliance and weak agricultural productivity. External constraints, including potential trade retaliation and reduced export competitiveness from peso appreciation, further limit room for manoeuvre. These realities suggest that the government's inflation toolkit is constrained, leaving it reactive and vulnerable rather than proactive in addressing long-term price stability.	Recall the guidance for in-body EV: ● Counter ● Extent Limitation
<u>Synthesis / Evaluative Judgement</u> **[State of the Economy]** In conclusion, when choosing policies to reduce inflation in the Philippines in 2021, the most critical factor is the constraints faced by the government, particularly fiscal limitations, import dependence, and the state of the labor market. While the benefits of policies—such as curbing demand-pull inflation through monetary tightening or protecting households via targeted subsidies—are important, and the potential costs of policy trade-offs must be considered, these are ultimately shaped and limited by the country's constraints. In 2021, the Philippines faced a large budget deficit, high unemployment, and a small, open economy heavily reliant on imported oil and food, which restricted broad fiscal interventions and made targeted supply-side measures more feasible. Monetary policy remained the primary tool for controlling demand-driven inflation, while subsidies and temporary tariff adjustments mitigated cost-push pressures. Therefore, understanding and navigating these constraints was crucial to designing effective, sustainable inflation policies.	Answer the question on the discussion of "Factors" – weigh whether benefits, costs or constraints is the most critical factor to consider for choice of policies Reason using CRATES criteria: state of the economy

Mark Scheme:

Level	Descriptors	Marks
L3	● A **clear** and coherent answer that is **relevant** to the question requirements and applied to its context. ● Answer covers sufficient **scope** with ***<u>at least two</u>*** distinct points of analysis in the context of Philippines: ○ R1: The government needs to consider the key <u>benefit</u> of its policy choice, i.e., how the policy choice can effectively address the root cause of the inflation. ○ R2: The government also needs to consider the <u>costs</u> arising from their policy choice and the <u>constraints</u> that each face in carrying out the policies. ● Answer is **accurate** and has sufficient **depth**: ○ Detailed and accurate explanation of economic concepts with **analytical** application to the question. ○ Economic analysis is supported by accurately labelled and explained diagrams (i.e. AD-AS analysis) and relevant real-world examples.	8-10
L2	● Answer is **mostly relevant** to the question requirements.	5-7

	• Answer **lacks scope** (e.g. considers only R1 or R2). • Answer may contain **minor inaccuracies** and has **insufficient depth** with **cursory** application to the question (e.g. incomplete or inaccurate explanation of economic concepts, incomplete or no explanation of diagrams and little or no use of real-world examples).	
L1	• Answer is **mostly irrelevant** to question requirements. • Economic concepts are not explained and/or **inaccurate**. • Economic analysis **lacks coherence** and **accuracy**. • Lacking in use of diagrams or wrong diagrams are used.	1-4

Evaluation		
E3	• Two well-explained evaluative judgements that are supported by arguments presented in the answer and linked to the context of the question PLUS a summative conclusion.	5
E2	Two evaluative judgements, one of which is explained.	3–4
E1	• Evaluative statements that are unexplained or not supported by the arguments presented in the answer OR a judgement that is not linked to the context of the question; OR • One explained evaluative judgement.	1–2

6 "Tariffs are the greatest! Either a country which has treated the United States unfairly negotiates a fair deal, or it gets hit with Tariffs. It's as simple as that."

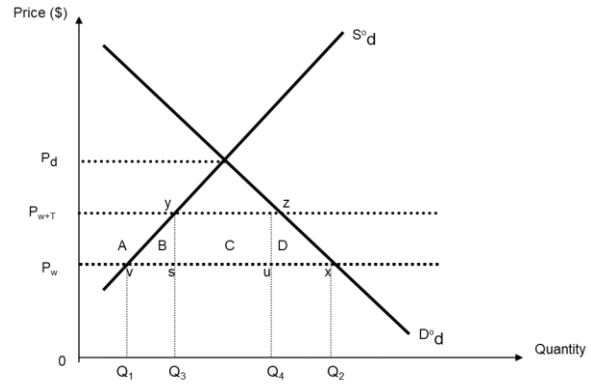
Donald J. Trump, Twitter (July 24, 2018)

(a) Explain the possible costs and benefits to the United States of imposing tariffs on imported goods. [10]

(b) Discuss the measures a small and open economy like Singapore can take in response to protectionist trade policies such as U.S. tariffs. [15]

Suggested answer for part (a):

Question Analysis	
Command	Explain how (process explanation)
Content	● Macro/Micro cost ● Macro/Micro benefits
Context	US
Synopsis: *Students are expected to explain at least 2 benefits and two costs to the US when it imposes tariffs on imported goods. At least one of the requirements should explore macro impact, while the other could include external or micro impacts or even impact to various stakeholders in the US. The use of a tariff diagram and ASAD analysis is expected.*	

Introduction A tariff is an indirect tax imposed on imported goods or services. Imposing a tariff can bring cost and benefits to the country.	Define key terms Direction of essay
R1: Explain the benefits to the US, when she imposes tariffs on her imports **a) Reducing the US trade deficit** To discourage the purchase of imports, the US government can impose a tariff on the imported good.  **Figure 1: Effects of a Tariff on Domestic Market** One benefit of imposing a tariff is an improvement in the U.S. trade balance. As shown in the tariff diagram, the imposition of a tariff **T** raises the domestic price of imports from P_W (the world price) to P_{W+T}. The higher price makes imports less price competitive compared to domestic substitutes.	**[DEPTH]** Answer should be contextualised to the goods market. Implication of the tariff should be explained.

Before the tariff, U.S. consumers were purchasing Q_1Q_2 imports at price P_W, resulting in an import expenditure of area **Q_1vxQ_2**, which was a net outflow of funds to foreign producers.

With the tariff in place, imports fall to Q_3Q_4 at the higher price $P_{W+T.}$ Although U.S. consumers now spend **Q_3yzQ_4** on imports, a portion of this expenditure — area C (**syzu)** accrues to the U.S. government as tariff revenue.

Therefore, the total outflow of funds to foreign producers falls from **Q_1vxQ_2** to **Q_3suQ_4**. This reduction in import expenditure means fewer dollars are leaving the U.S. economy, thus improving the trade balance.

b) Economic growth

Another benefit of tariffs is their potential to stimulate economic growth. By raising the price of foreign goods, a tariff encourages households to switch their spending toward U.S.-produced substitutes. This raises domestic consumption and hence AD.

The initial rise in AD due to the rise in C from AD_o to AD_1, will cause an unplanned fall in the firm's inventory.

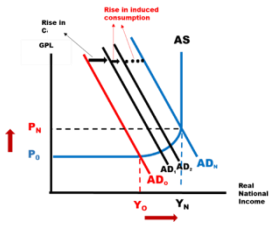


Figure 2: Effects of a Tariff on real GDP

To maintain their inventory, firms will need to employ more resources such as labour. As more labour are hired, they receive more in wages hence raising their purchasing power.

This leads to a multiple rise in **induced** consumption followed by a multiple rise in AD from AD_1 to AD_N. AD will be rising at a decreasing rate.

Thus, a rise is AD due to the rise in C would result in a multiple rise in real national income from Y_o to Y_N thus enabling the US to achieve economic growth.

[DEPTH] Answer should show how trade balance will improve via a fall in import expenditure.

[DEPTH] Implication of the tariff should be linked to ADAS. Since focus is on rising real GDP, explanation of the multiplier is required.

R2: Explain the costs to the US, when she imposes tariffs on her imports

a) Worsening allocation of resources

A key cost of tariffs is the misallocation of resources that arises from deadweight loss. From Figure 1, the imposition of a tariff raises the domestic price of imports from P_W (the world price) to $P_{W+T.}$

As a result, consumer surplus falls by areas A+B+C+D. Of this loss, area A is transferred to domestic producers as additional producer surplus, while area C accrues to the government as tariff revenue.

However, areas B+D are not transferred to any stakeholder. They represent a deadweight welfare loss to society, reflecting the reduction in mutually beneficial trades that would have taken place under free trade. This deadweight loss indicates that resources are being allocated inefficiently.

[DEPTH] Linkage to the tariff diagram should be made to show the fall in consumer's surplus.

Thus, while tariffs may provide temporary relief for domestic firms, they impose a long-term cost on the U.S. economy by creating inefficiency and misallocation of resources. **b) Inflation** Another cost of tariffs is the inflationary pressure they may create. As shown in Figure 2, the imposition of a tariff redirects spending on imports toward domestically produced goods, thereby raising aggregate demand (AD). At the initial general price level Po, this increase in AD creates excess demand in the economy. This puts upward pressure on the general price level, leading to demand-pull inflation. From Fig 2, we see that eventually, GPL rises from P_o to P_1. Such inflation erodes households' purchasing power, particularly affecting lower-income groups whose real incomes fall more sharply. **Alternate Explanation** If the tariff is imposed on imported raw materials such as steel, firms will experience higher cost of production. This would lead to a reduction in output by firms. The falling output lowers SRAS. At the initial general price level Po, this fall in AS creates excess demand in the economy. This puts upward pressure on the general price level, leading to cost push inflation. DRAW a fall in SRAS and show GPL rising. Such inflation erodes households' purchasing power, particularly affecting lower-income groups whose real incomes fall more sharply.	**[DEPTH]** Linkage to the AS AD diagram should be made to show the rise in GPL.
Conclusion The imposition of tariff by the US, may help the US achieve an improved trade balance and economic growth however it may also lead to inflation and greater inefficient allocation of resources.	

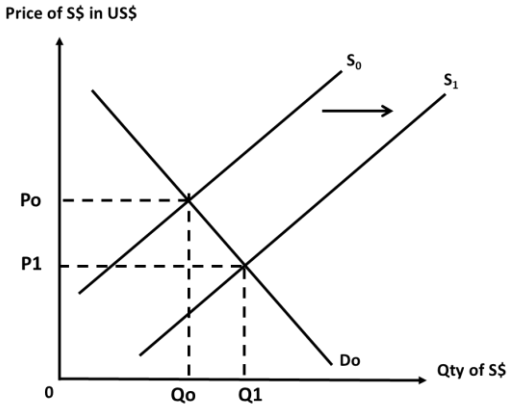
Mark Scheme:

Level	Descriptors	Marks
L3	● A **clear** and coherent answer that is **relevant** to the question requirements and applied to its context. ● Answer covers sufficient **scope** with *at least two* distinct points of analysis: ○ R1: Explain the benefits to the US, when she imposes tariffs on her imports ○ R2: Explain the costs to the US, when she imposes tariffs on her imports ● Answer is **accurate** and has sufficient **depth**: ○ Detailed and accurate explanation of economic concepts with **analytical** application to the question. ○ Economic analysis is supported by accurately labelled and explained diagrams (i.e. Tariff diagram, ASAD analysis) and relevant real-world examples.	8-10
L2	● Answer is **mostly relevant** to the question requirements. ● Answer **lacks scope** (e.g. considers only consumer or producer). ● Answer may contain **minor inaccuracies** and has **insufficient depth** with **cursory** application to the question (e.g. incomplete or inaccurate explanation of economic concepts, incomplete explanation of diagrams and little or no use of real-world examples).	5-7
L1	● Answer is **mostly irrelevant** to question requirements. ● Economic concepts are not explained and/or are **inaccurate**. ● Economic analysis **lacks coherence** and **accuracy**. Lacking in use of diagrams or wrong diagrams are used.	1-4

(b) Discuss the measures a small and open economy like Singapore can take in response to protectionist trade policies such as U.S. tariffs. [15]

Suggested answer for part (b):

Question Analysis	
Command	Discuss the measures
Content	• Adress the negative impact of US tariff on Singapore • Need to identify the negative impact of US tariff on Singapore and provide measure
Context	Singapore
Synopsis: *In this question, students are expected to explain **two policies Singapore can adopt to respond to the impact of U.S. tariffs**. One approach is to focus on **trade policies** that help Singapore revive its export performance, such as exchange rate management or free trade agreements.* *Alternatively, students may discuss **macroeconomic policies** that maintain stability and growth despite U.S. protectionism, such as supply-side measures to boost competitiveness.* *In either case, answers should go beyond description by including **evaluation of each policy**, weighing their effectiveness, limitations, and suitability in the context of Singapore as a **small and open economy**.*	

Introduction Singapore, as a small and open economy, is highly dependent on international trade. Protectionist measures such as U.S. tariffs can reduce demand for Singaporean exports and disrupt economic growth. To respond, Singapore can implement trade-oriented measures, such as exchange rate adjustments and trade diversification.	Direction of essay
R1: Explain how Singapore can use depreciation in response to US tariffs As a **small and open economy heavily dependent on trade**, Singapore is highly exposed to the negative effects of U.S. tariffs, which raise the foreign-currency price of its exports and reduce its export revenues. One **measure Singapore can take to address its fall in export revenue** is to allow a depreciation of the Singapore dollar (SGD) against the U.S dollar (USD). Depreciation can be achieved by increasing the supply of SGD in the foreign exchange market, for example, through MAS selling SGD and buying USD. The higher supply of SGD creates a surplus at the prevailing exchange rate, putting downward pressure on its value.  Fig 3	**[SCOPE]** It is vital that you identify the problem pose by US tariff on Singapore. This will allow you to scope your policies to be inline with addressing the problem. For example, if you claim that US tariff would reduce Spore's export revenue, then your policy should be centred around raising Spore's export revenue. If you claim that US tariff would lead to a fall in Spore's export revenue and hence a fall in AD leading to a fall in real GDP, then your policy should be centred around raising Spore's real GDP! **[DEPTH]** Explain how Singapore can

U.S. tariffs raised the foreign-currency price of Singapore's exports, leading to a fall in Singapore's export revenue. A depreciation lowers the foreign-currency price of Singaporean goods, which helps cushion this fall in export demand. The depreciation of the SGD would make Singapore's export relatively cheaper in USD and hence raise the demand for Singapore's exports. Singapore's export revenue would rise from from 0PoAQo to $0PoBQ_1$.

depreciate its currency against the US$

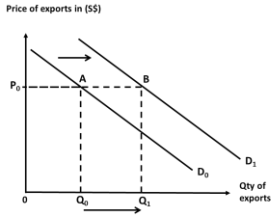


Figure 4: Effects of depreciation on Spore exports to US

When the Singapore dollar (SGD) depreciates against the U.S. dollar (USD), it can encourage greater inflows of U.S. foreign direct investment (FDI) into Singapore while also boosting Singapore's export revenue.

[ACCURACY]
It is crucial to clearly explain how **depreciation of the SGD** can be used to counter the impact of U.S. tariffs. The explanation should focus on how a weaker exchange rate lowers the relative price of Singapore's exports in USD terms, thereby making them more competitive in the U.S. market and helping to sustain or increase export revenue despite the tariff.

Other Ways Depreciation can increase Export Revenue (Optional if not enough depth)

Explain how weaker Singapore dollar can encourage FDI

A weaker SGD reduces the relative cost of production in Singapore when measured in USD terms, since U.S. investors can now purchase more resources such as labour, land, and services with the same amount of dollars. This makes it cheaper for U.S. firms to establish or expand operations in Singapore.

Explain how FDI can raise export revenue

When multinational corporations, such as those from the United States, invest in Singapore, they often establish production facilities, regional headquarters, or research hubs. These operations typically produce goods and services not just for Singapore's small domestic market, but for export to regional and global markets. For example, U.S. firms investing in Singapore's electronics or pharmaceutical sectors may use Singapore as a base to manufacture products that are then exported worldwide, thereby raising the total value of Singapore's exports.

[EV1] The use of depreciation of SGD in response to US tariff (pick 1)

- Depreciation can reduce Singapore's export competitiveness. As a small economy that imports most of its factor inputs, depreciation carries significant risk. Singapore relies on the U.S. for certain factor inputs (FOPs) that are critical to its high-value sectors, including semiconductor manufacturing equipment and aerospace technology. A weaker SGD increases the domestic cost of this imported raw material, raising production costs for firms in electronics, aerospace, and advanced manufacturing. Higher input costs may reduce profitability and prompt firms to raise export prices potentially undermining the competitiveness of these industries in the long run. This could lead to a fall in the overall export revenue of Singapore.

- Depreciation can lead to inflation in Singapore. Depreciation raises the cost of producing goods in Singapore, especially for firms that import raw materials, machinery, or intermediate goods from the U.S. Higher input costs reduce firms' profits and may constrain production, leading to a leftward shift of short-run aggregate supply (SRAS). The contraction in SRAS creates excess demand at the original price level, putting upward pressure on prices. Over time, this can result in cost-push inflation, as higher production costs translate to higher prices of goods and services.

[ACCURACY]
Shortcomings of depreciation should be addressed.

Recall the guidance for in-body EV:

- Counter
- Extent
- Limitation

R2: Explain how Singapore can sign more FTA in response to US tariffs Being a small and open economy, Singapore's trade dependence is exceptionally high, with total trade exceeding three times its GDP. This leaves it highly exposed to external shocks such as U.S. tariffs, since it lacks a sufficiently large domestic market to absorb the fall in demand. Another measure Singapore can adopt to raise export revenue in direct response to U.S. tariffs, is to diversify its export markets by signing or expanding **FTAs** with other trading partners. While U.S. tariffs reduce demand for Singapore's exports to the American market, FTAs provide tariff-free access to other large economies, allowing Singaporean firms to redirect exports and recover lost revenue. For instance, under the **CPTPP** and the **EU–Singapore FTA**, Singapore's electronics, pharmaceuticals, and services exports enjoy preferential access to Japan, Canada, Australia, and the EU. As shown in Figure 1, before the FTA, tariffs raised the price of Singapore's exports to P_{W+T} , restricting export volume to Q_3Q_4 and yielding only **Q_3suQ_4** in revenue. With the FTA, the tariff is removed and the price falls back to Pw, expanding demand to Q_1Q_2 and raising export revenue to **Q_1vxQ_2**. This increase in export earnings helps to offset the fall in demand from the U.S. and improves Singapore's overall trade balance.	**[DEPTH]** It is not enough to explain that FTA will increase export revenue. There is a need to relate how FTA will address the current fall in export revenue due to the US tariffs. A frame work such as a tariff diagram should be used to explain how FTA raises export revenue.
[EV2] Extent of success for campaigns ● Although signing more FTA seems like a viable solution, they are not an immediate solution. Negotiations often take years, and in the short run, Singaporean firms may continue to face reduced revenues. ● Moreover, FTAs require exporters to comply with rules of origin and differing product standards, which raise compliance and administrative costs. For example, electronics exporters must prove that a sufficient proportion of value-added originates in Singapore to qualify for tariff-free access, which can be burdensome for firms with complex global supply chains. ● Finally, Singapore's ability to fully divert exports depends on whether partner markets demand the same type and scale of goods previously sold to the U.S.; for instance, U.S. demand for semiconductor equipment and aerospace components may not be perfectly matched by EU or Japanese markets. This means FTAs can only partially cushion the negative effects of U.S. tariffs, though they remain crucial for long-run diversification and resilience.	**[DEPTH]** Elaborate in context of the question. Think about why it takes time? Why is it difficult to find another trading partner?
Synthesis / Evaluative Judgement In conclusion, Singapore can respond to U.S. tariffs through **short-run measures** like depreciation of the SGD, which immediately improves export competitiveness and cushions the fall in export revenues, but risks imported inflation and higher production costs given Singapore's heavy reliance on foreign inputs. In contrast, **trade diversion through FTAs** offers a more sustainable solution by diversifying export markets and reducing reliance on the U.S., while also strengthening long-run competitiveness through investment flows and regulatory cooperation. However, FTAs require time to negotiate and cannot provide instant relief. Thus, while depreciation may stabilise exports in the short run, FTAs provide a more effective and resilient long-term response for a small and open economy like Singapore.	Answer the question "successful to a large extent" or "successful to a small extent" Reason using CRATES criteria: root cause

Mark Scheme:

Level	Descriptors	Marks
L3	● A **clear** and coherent answer that is **relevant** to the question requirements and applied to its context. ● Answer covers sufficient **scope** with *at least two* distinct points of analysis in the electric vehicle market: ○ R1: Explain how Singapore can use depreciation in response to US tariffs ○ R2: Explain how Singapore can sign more FTA in response to US tariffs	8-10

	● Answer is **accurate** and has sufficient **depth**: ○ Detailed and accurate explanation of economic concepts with **analytical** application to the question. ○ Economic analysis is supported by accurately labelled and explained diagrams (i.e. tariff diagram, ASAD analysis, Demand for export diagram) and relevant real-world examples.	
L2	● Answer is **mostly relevant** to the question requirements. ● Answer **lacks scope** (e.g. considers one policy, did not explain causes of market failure). ● Answer may contain **minor inaccuracies** and has **insufficient depth** with **cursory** application to the question (e.g. incomplete or inaccurate explanation of economic concepts, incomplete or no explanation of diagrams and little or no use of real-world examples).	5-7
L1	● Answer is **mostly irrelevant** to question requirements. ● Economic concepts are not explained and/or **inaccurate**. ● Economic analysis **lacks coherence** and **accuracy**. ● Lacking in use of diagrams or wrong diagrams are used.	1-4

Evaluation		
E3	● Two well-explained evaluative judgements that are supported by arguments presented in the answer and linked to the context of the question PLUS a summative conclusion.	5
E2	Two evaluative judgements, one of which is explained.	3–4
E1	● Evaluative statements that are unexplained or not supported by the arguments presented in the answer OR a judgement that is not linked to the context of the question; OR ● One explained evaluative judgement.	1–2